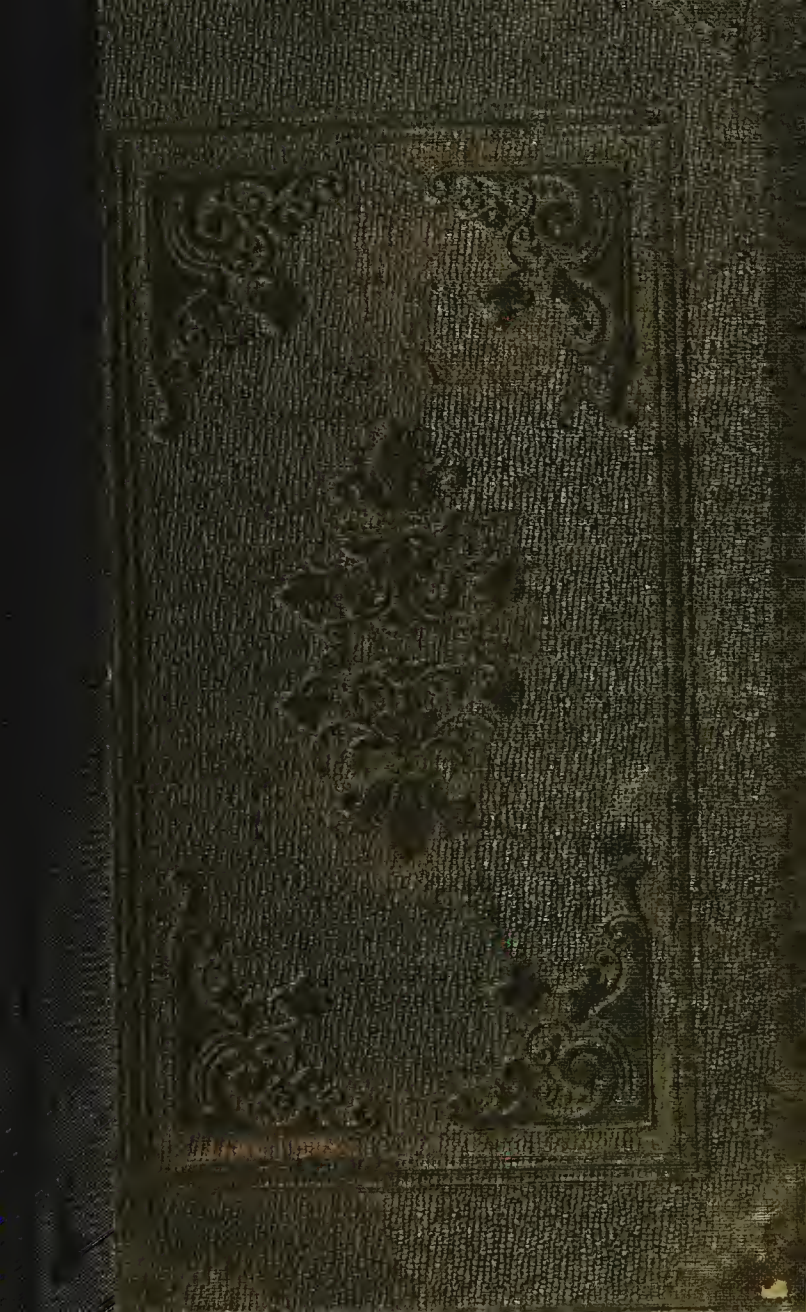

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EUROPEAN CAVALRY,

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INCLUDING DETAILS OF THE

ORGANIZATION OF THE CAVALRY SERVICE

AMONG THE

PRINCIPAL NATIONS OF EUROPE.

BY

GEO. B. McCLELLAN,
MAJOR-GENERAL U.S. ARMY.

FULLY ILLUSTRATED.

PHILADELPHIA:
J. B. LIPPINCOTT & CO.
1861.

Xerox

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PUBLISHERS' PREFACE.

THE surest method to attain to excellence in any organized system is to collate and compare all similar organizations, already based upon experience, and to gather from each such parts as may be adapted to our own. This principle is of special application in so important a science as that of war, and in so momentous a period as the present.

Such is the design of this volume. Organizing for the first time a large and splendid cavalry force, to meet a want not felt in times past, the United States Government is determined to introduce into the system every thing worthy of imitation in European cavalry; and it is especially fortunate that there exists such general information to aid them. In this work will be found particularly minute and specific descriptions of the cavalry systems of the English, French, Russian, Prussian, Sardinian, and Austrian armies, recorded from careful personal observation by General McClellan, while military commissioner to Europe from the United States Government.

Every facility was afforded him; and most admirably did he use his opportunities, noting all the good points

and boldly commenting upon the faults of each system as it came under his observation.

This work, although complete in itself, forms a valuable companion-volume to the *Field Regulations for the United States cavalry in time of war*, as, besides affording much valuable and interesting information, thoroughly illustrated by diagrams and plans, it shows how, from this extended and various material, McClellan has condensed new principles and established a new system.

These principles and this system, from his now exalted position, he can order into daily execution and test thoroughly, and thus apply his own theories to an extended and successful practice.

PHILADELPHIA, Oct. 3, 1861.

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EXPLANATION OF THE SIGNS.

SCHOOL OF THE PLATOON.

Officer.

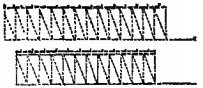
Sergeant.

Trumpeter.

Private of front rank.

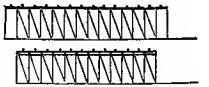
Private of rear rank.

Original position.



PLATOON DEPLOYED.

Second position.



Final position.

SCHOOL OF THE SQUADRON.

Commander of division, (2 squadrons.)

Commander of squadron.

Officers.

Sergeants.

Privates of front rank.

Privates of rear rank.

Standard.

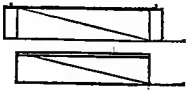
Trumpeter.

Drummers.

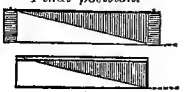
Original position.

PLATOON DEPLOYED.

Second position.



Final position.



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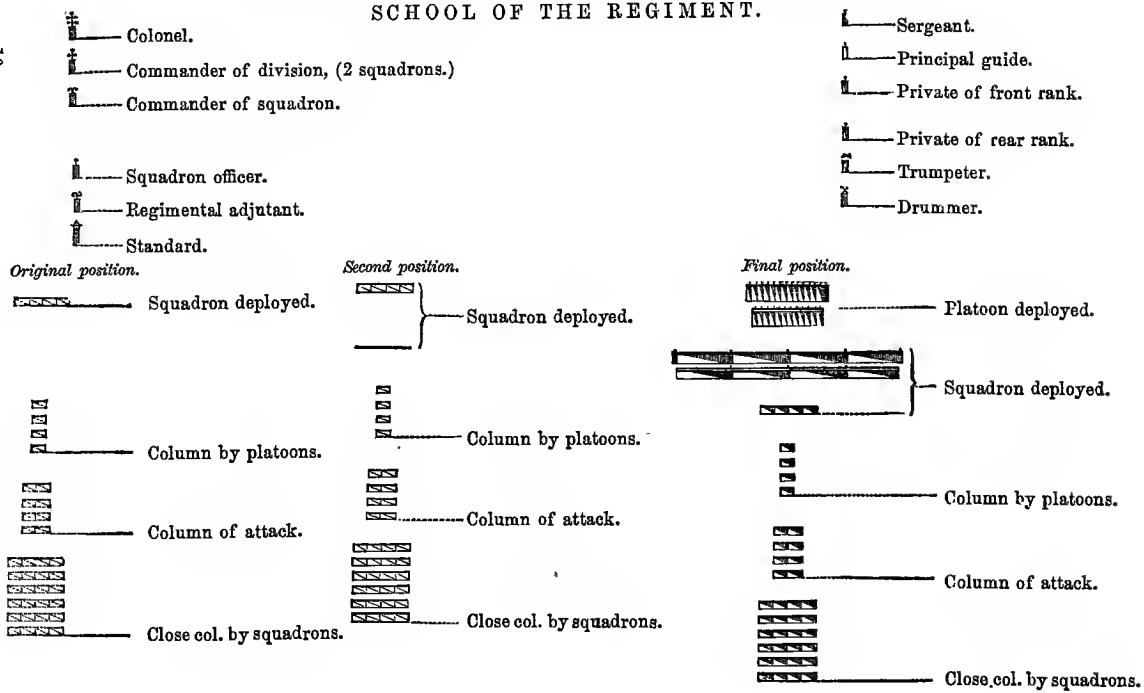
SCHOOL OF THE REGIMENT.



EVOLUTIONS OF THE LINE.

General of Division.

General of Brigade.

Colonel.

Original position.

Squadron deployed.

Column by platoons.

Column of attack.

Close column by squadrons.

Skirmishers.

Light battery deployed.

Heavy battery deployed.

Battery in colnmn by half battery on the centre.

Commander of division, (2 squadrons.)

Commander of squadron.

Adjutant.

Second position.

Squadron deployed.

Column by platoons.

Column of attack.

Close column by squadrons.

Direction of movement.

EXPLANATION OF THE SIGNS.—*Continued.*

EVOLUTIONS OF THE LINE.—*Continued.*

Principal guides.

Trumpeters.

Drummers.

Final position.

Squadron deployed.

Column by platoons.

Column of attack.

Close column by squadrons.

General column.

Skirmishers.

Light battery deployed.

Heavy battery deployed.

Battery in double column on the centre, by half battery.

EUROPEAN CAVALRY.

CHAPTER I.

RUSSIAN CAVALRY TACTICS.

THE Russian cavalry tactics comprise the following schools, or divisions of instruction: 1. The school of the recruit, divided into: *a.* Manège, or individual equitation; *b.* Drill in single rank; *c.* Sabre, lance, carbine, and pistol exercise. 2. The school of the platoon. 3. School of the squadron. 4. School of the regiment. 5. Evolutions of the line. As supplements to these, are the regulations for service in garrison and in the field; the latter being divided into regulations for field service during peace, and those for time of war.

It is proposed to give in this chapter sufficiently copious extracts from the tactics to explain the system of instruction and its peculiarities. The sabre exercise is presented in full. The subjects are presented in the order in which they occur in the tactics; those portions being omitted which are neither new nor interesting. Although generally condensing the text, I have endeavored to preserve the spirit and language of the original Russian.

I. SCHOOL OF THE RECRUIT.

The instruction of the recruits is presumed to require nine months; immediately after joining the regiment or depot, they are placed under the charge of monitors, selected from among the most steady and intelligent old soldiers.

1st month. The recruits are taught certain religious duties and the obligations of their new vocation. The monitors impress upon them the advantages of irreproachable conduct, and the consequences of negligence, evil disposition, and crime. They are made acquainted with all parts of a soldier's uniform, how to wear, and keep it in order.

2d month. They are taught how to clean a horse; are made acquainted with the names, object, and manner of using the

different parts of the horse equipment; are taught how to place the saddle, (without the pack,) first on a wooden horse, afterwards on the animal itself; to clean their arms and take them to pieces; and they commence chanting the signals.

3d month. They are taught the first principles of dismounted drill, beginning with the facings and marching; to load without the motions; the *principles* of the skirmish drill, and of duty at the advanced posts, whether on foot or mounted, according to the following system:—

1. The instruction commences with the signals and the movements of skirmishers without arms; when they have learned to load without the motions, their firearms are given to them when learning the duties of advanced posts.

2. The most simple signals, such as "common time," "right turn," &c., are employed at first, afterwards passing to the more difficult.

3. In all the lessons the proper progression is observed, never advancing to any new lesson until all that precedes is comprehended.

4. After a certain amount of preliminary instruction, the recruits are divided into classes, or squads, according to their progress.

5. In the more advanced squads, the recruits will have their positions in the ranks changed, that they may learn the duties of all positions.

6. To complete the instruction in the duties of advanced posts, squads will be placed in front of each other, that the men may understand the position of the enemy and the manner of applying what they have been taught.

4th month. The instruction of the preceding month is continued by drilling the recruits, on foot, at the rank and platoon drill for mounted troops. At the beginning of this month they are taught the first principles of equitation with the snaffle, each man always having the same quiet, well-broken horse. The men are not required to maintain a correct seat in the first lessons, and the observation of the principles is insisted upon only when they can sit the horse without fear of falling off, and have acquired a certain amount of self-confidence.

5th month. Equitation with the snaffle is continued. The men are taught the facings and marching on foot with arms; the use of arms on foot, beginning with the sabre, then passing to the firearms, and finally to the lance—for troops armed with that weapon.

6th month. The instruction in taking apart and putting together the firearms is completed. Equitation with the curb,

without arms, is commenced by all sufficiently instructed in riding with the snaffle. They are at the same time taught the manner of bitting a horse, packing the valise and cartridge-box, and saddling up with the complete pack.

7th month. Equitation with the curb, with arms.

8th month. Full instruction in the rank, platoon, and skirmish drills, with arms and mounted.

9th month. Use of all arms, mounted.

After this month the recruit is occupied in perfecting himself in the instruction prescribed for the preceding months.

The progression herein prescribed is to be carefully observed; great care is to be taken not to exact too great precision at first, in order not to disgust the recruits. Each drill should last not longer than from one hour to one hour and a half. Great care must be exercised in the choice of instructors, who should unite patience with knowledge, and possess the faculty of giving clear explanations.

During the first six months the recruits are to be instructed at least twice a week by the chaplain in their religious duties, such as the Lord's Prayer, the Ten Commandments, the Apostles' Creed, the Psalms, &c. In detached squadrons the religious instruction is given by the sergeants.

MANÈGE RIDING.

This should be limited to the actual necessities of the service, and by the natural capacity of the horse; therefore more is required of the non-commissioned officers than of the privates, because the former have the best riding-horses. The non-commissioned officers are taught—

1. The walk.
2. The trot: (*a*) the common trot, and (*b*) the trot out.
3. The gallop, on either foot.
4. The charge.
5. To rein back.
6. The right and left turn, right about and left about turn, in place.
7. The passage to the right and left.
8. The turns and abouts, at all gaits; at a gallop, both true and false.
9. To ride in circle to right and left, at all gaits.
10. To circle back to rear on same track, at all gaits; at a gallop, both true and false.
11. To change direction across the riding-hall, at all gaits.
12. To change foot when galloping on a straight line.

13. To leap ditches and fences.

The privates are taught every thing prescribed above, with the following exceptions: they are not required to change foot at a gallop, nor to gallop false; it is only at a walk and trot that they ride in circle, circle back to rear on the same track, and change direction in the riding-hall. Nevertheless, the privates having the best horses should receive the instruction prescribed for the non-commissioned officers, as far as the strength and fitness of the horses and the aptness and intelligence of the men will permit. Commanders of troops should never require of the men more than is prescribed in these instructions, and should never lose sight of the preservation of their horses; for a horse in good order, although less perfectly broken to the rules of manège riding, is preferable to one perfectly instructed in all these rules, but broken down.

The recruits are carried through the course indicated above, at first with the snaffle, afterwards with the curb. The squads are made as small as the available number of instructors will permit, and the movements in the riding-hall are few in number and simple in kind, being limited to those actually necessary for the purpose in view.

THE GAITS.

There are three kinds of gaits: the walk, trot, and gallop.

The trot is of two kinds: (*a*) the common trot, (*b*) the trot out.

The charge is the acceleration of the gallop to the utmost power of the horse.

At a walk the horse travels about $3\frac{1}{3}$ miles per hour; at the common trot, $6\frac{2}{3}$; at the trot out, $9\frac{1}{3}$; at the gallop, 8.

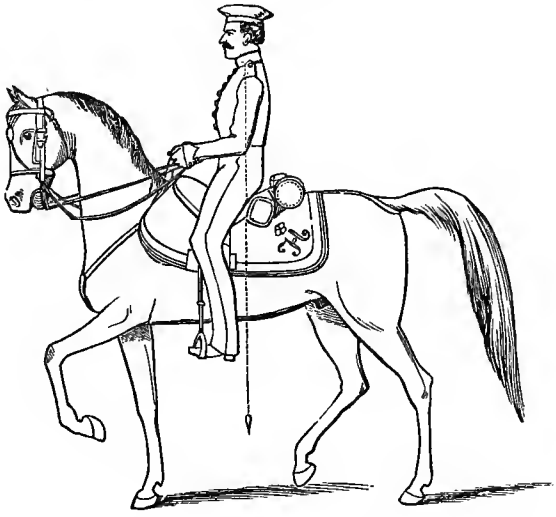
EQUITATION.

The instructor must never allow the recruit to pass from one lesson to another until he fully understands and can execute all that precedes. When the recruit has learned how to arrange his equipment, to take care of a horse, to saddle and bridle him, he takes his first lessons in riding, on a quiet, well-broken horse. The first lessons are given with the snaffle; the man is to be in undress uniform, without arms or accoutrements, the horse without schabraque, but with a surcingle; in the first lessons with the curb the recruit is without arms or accoutrements, then with both, and finally with the schabraque and full pack. In the beginning the recruit is required to ride with stirrups somewhat shorter than the proper length, that he may acquire confidence and firmness in his seat, without which the

fear of falling from his horse renders him inattentive to the explanations of the instructor. In the course of time, as he progresses, the stirrups are lengthened, and finally he is required to ride without them, until he acquires a perfectly firm seat; then he is again obliged to ride with stirrups an inch too long, and is thus, in the course of several lessons, brought by degrees to the prescribed length.

It is necessary to explain to the recruit that he should not press hard upon the stirrups, or thrust them forward, but allow them to hang vertically; also, that the bottom of the stirrup should never be under the hollow of the foot, but that the first joint of the great toe should be against the inner side of the stirrup; in other words, the ball of the foot rests on the stirrup. Spurs are given to the recruit when he is fully confirmed in his seat, with and without stirrups.

Fig. 1.



THE SEAT.

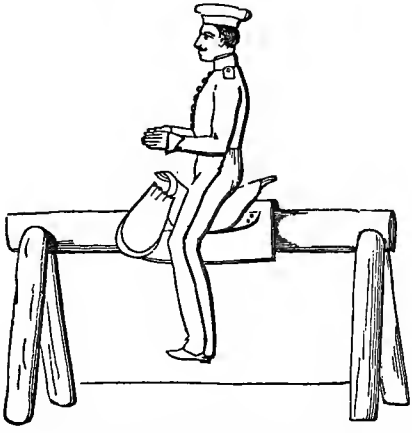
The body of the rider is divided into three parts, of which two are movable aud one immovable: one of the first consists of all the upper part of the body, down to the waist, the other of the lower part of the legs, from the knee down; the immovable portion is from the waist to the knees. (Fig. 1.)

The cavalry soldier should sit square on the middle of the saddle, the upper part of the body presenting a free and unconstrained appearance, the chest not much thrown forward, the ribs resting freely on the hips, the waist and loins not stiffened, and thus not exposed to tension or effort from the motions of the horse; the upper part of the body should lean slightly to the rear, rather than forward; the thighs, inclining a little forward, lie flat and firmly on the saddle, covering the surcingle, of which only a small part, behind the knee, should be seen; the lower part of the leg, hanging vertically from the knees, touches the horse, but without the slightest pressure; the toes are pointed up, without constraint, and on the same line with the knees, for, if the toes are turned outward, it not only causes the horse to be unnecessarily pricked by the spurs, (especially when marching in line,) but the firmness of the seat is lost; the heels should be $\frac{7}{8}$ (seven-eighths) of an inch below the toes, and the stirrups so adjusted that, when the rider raises himself on them, there may be the breadth of four fingers between the crotch and the saddle; to make this adjustment, when the recruit has acquired a firm and correct seat, he should, without changing that seat, push the bottom of the stirrup to the hollow of the foot, and then, with the foot horizontal, feel a slight support from the stirrup; when this is accomplished, he replaces the foot properly in the stirrup, and the heel will then be $\frac{7}{8}$ of an inch below the toes.

To give the recruit a correct seat, the instructor, having caused him to mount, seizes the lower part of his leg, and stretches it straight towards the fore-quarters of the horse, so as to bring the buttocks of the rider square on the saddle; then, resting one hand on the man's knee, he seizes the lower part of the leg with the other, and carries back the thigh and knee so as to bring the crotch square on the saddle, the thighs covering the surcingle, the lower part of the leg, from the knee down, also over the surcingle, and sees that the recruit does not sit too much on his crotch, but has his buttocks well under him. He then explains to the recruit that the firmness of the seat consists in this: that the rider grasps the horse with his legs; that both thighs press equally upon the saddle, in conformity with the movements of the body; and that the general movements of the body and thighs must conform to those of the horse. To spare the horses, and explain more readily to the recruit the principles of the seat, he should at first sit upon a wooden horse, on which a saddle is secured, (Fig. 2;) on this he should learn to carry the thighs back, without leaning the body forward; at the same time he is taught how to hold the feet,

without allowing him to place them in the stirrups, for this is one of the most essential conditions for a good seat.

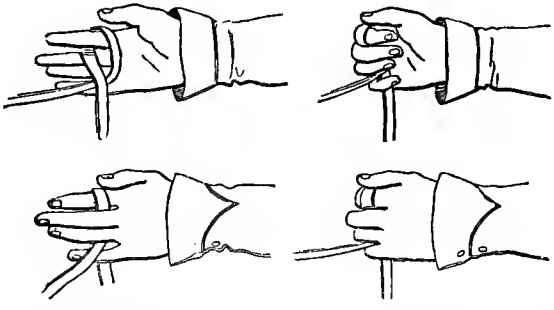
Fig. 2.



Position of the hands and arms when riding with the snaffle.

Both arms free, and without the slightest stiffness in the shoulders; the elbows bent; the upper part of the arms a little

Fig. 3. Fig. 4.



forward of the vertical; the forearms resting against the sides, without pressure; both hands raised a little above the elbows, but not higher than the eyes of the horse; the hands five or six fingers' breadth apart, the outer hand higher than the inner;

the units on the prolongation of the forearms; the thumbs on top, and not turned inwards; the manner of holding the reins is shown in Figs. 3 and 4.

Position of the hands and arms when riding with the curb. (Fig. 1.)

The left arm free, and without the slightest stiffness; the elbow bent, and on the vertical line from the shoulder to the hip; the forearm touches the side, without pressure; the hand in the prolongation of the forearm, and two or three fingers' breadth above the pommel; the curb-reins pass upward through the hand, and over the forefinger, covered by all the four fingers, the nails opposite the bottom of the jacket, and in such a position that the rider can see the little-finger nail by casting his eyes on the hand; the snaffle-reins pass over the forefinger, and downwards through the hand, lying flat in the hollow of the hand; the thumb presses on top of the reins; the right hand rests, with the knuckles, on the seam of the pants, on the right thigh, seven inches below the hip, the fist closed, except the thumb, which lies on the seam, pointing upwards; the elbow on the line of the shoulders.

For the lessons with the snaffle, the horse is conducted to the ground without passing the reins over his head, they are passed over just before placing the left foot in the stirrup; in the lessons with the curb, the horse is conducted to the ground with the reins already passed over the neck; in both cases the reins are held in the left hand while mounting.

In the first lessons with the curb, the curb-chain is hooked on the ground, under the direction of the instructor; it is of such a length that two fingers may be laid flat between it and the chin.

All individual turns and abouts, from a halt, are made by turning the horse on his hind-legs as a pivot; in wheels by platoon, or by squadron, on a fixed pivot, the pivot-man turns in this manner. Turns on a march are made on an arc with a radius of three yards.

THE DRILL IN SINGLE RANK.

This is commenced when the men are well instructed in the individual riding drill; from six to fifteen men are formed in one rank, with a non-commissioned officer or old soldier on each flank. The recruits first execute this drill on foot, and are not required to execute it on horseback until they understand its principles fully. When mounted, the men are at first placed two

yards apart, and as they progress the files are closed in, until they touch stirrups, towards the guide. The instruction is commenced in open order, to accustom each man to observe the rules for moving straight forward, to oblige him to conduct his horse independently of his neighbor, and to force him to pay more attention; for, in close order, the men, by blindly following the movements of their comrades, might execute many movements satisfactorily without understanding them, and it would be impossible for the instructor to ascertain the proficiency and progress of each man. Every movement should be executed first at a walk, afterwards at the other gaits. The recruits should be mixed with old soldiers in the ranks, to prevent mistakes from extending through the whole rank; but the instructor must watch carefully that the old soldiers do not prompt the recruits.

At the commencement of every drill in single rank, the recruits should be required to execute some of the lessons of the individual drill; so that correctness of riding, and facility of executing the movements in close order, may always be preserved.

The single rank drill comprises all the movements of the platoon drill that can be executed in one rank.

THE USE OF THE SABRE.

This is one of the most important elements in the instruction of the cavalry soldier; for the sabre is the arm common to all cavalry.

The recruit should go through the whole exercise not less than once a week.

The rules for the use of the sabre are divided into two parts: (*a*) the manual; (*b*) the sabre exercise.

The use of the sabre is taught by means of commands and numbers. The commands of execution are called *times*, and these times are subdivided into particular movements called *motions*. At the commencement of the instruction, the instructor calls the numbers and executes the motions himself; when the recruit becomes accustomed to the use of the weapon, he is obliged to execute the motions and call the numbers simultaneously with the instructor; after that the recruit calls the numbers and executes the motions for himself; finally, he executes the motions without calling the numbers.

The use of the sabre is first taught to single men on foot, then by uniting several men, and finally on horseback.

THE SABRE MANUAL.

This is so similar to that in use in the United States service as to render it unnecessary to describe it in this report, with the exception of two peculiarities, viz.: when the sabre is at a carry both the little finger and that next to it are outside of the gripe; there is a position of reversed sabre, for funerals, as follows: the blade passed between the left arm and the body, point to the rear, edge to the left, the flat of the blade resting on the left forearm, close to the guard, the gripe held lightly by the right hand, the blade horizontal.

THE SABRE EXERCISE.

This is divided into parts, the first in *open order*, the second in *close order*. The first part is subdivided into: (*a*) the sabre exercise *for the attack;* (*b*) that *for the retreat.*

Fig. 5.

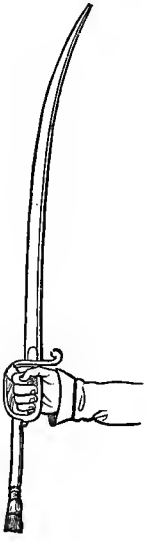


Fig. 6.

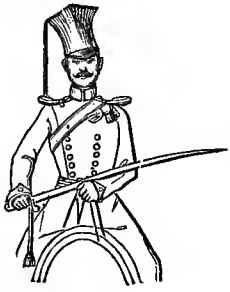


Fig. 7.

Guard.

I. THE SABRE EXERCISE IN OPEN ORDER.

A. In the attack.

The instruction should be at first given to single men, or small squads, on foot; afterwards, in the same manner, mounted; first

at a halt, then in motion—*i.e.* first at a walk, then at a trot, gallop, and charge.

The use of the sabre on foot forms no part of the duty of a cavalry soldier, and is given only as preparatory to its use on horseback, which is its proper object.

In giving the instruction, it should be explained that the following movements constitute the basis of the system: 1, the moulinets; 2, one thrust; 3, three cuts; 4, four parries; all the other movements given are merely combinations or modifications of these.

In the motions of the sabre, it is, as a general rule, grasped by the right hand, the four fingers encircling the gripe, the thumb on the opposite side, resting on the forefinger, (fig. 5;) but if the soldier is to thrust, he places the thumb on the back of the gripe, the end of the thumb against the guard.

All the motions are made from the position of "guard."

The recruit being at a carry, to cause him to assume the position of guard, the instructor commands:

GUARD.—1 *time.*

(Fig. 6.) Carry the right hand about 10 inches in front of the right hip, the blade in an oblique position, the point a little raised, the edge upwards, the back of the blade resting in the hollow of the left arm, as near the body as possible. In this position the right hand should be without the slightest effort or constraint, and should not feel the weight of the sabre, which is supported by the left arm.

(Fig. 7.) In the instruction on foot it is necessary to give the recruit a position corresponding to that on horseback; therefore, at the command, *guard*, he carries his right foot 18 inches from the left, the heels on the same line, the weight of the body supported equally on both legs, which are a little bent at the knees; at the same time he moves his left forearm and hand to the front, placing them as if holding the reins when mounted, and holds the right hand and sabre as already prescribed. This position, once taken, is maintained during the whole lesson.

The recruit returns to a carry, as in the United States sabre exercise, except that when at a carry both the little finger and that next to it are outside of the gripe.

THE MOULINETS.

The lessons in the sabre exercise are commenced with the moulinets, for the following reasons: 1, they accustom the men to the circular movements of the edge of the sabre, necessary in

all the motions; 2, they give to the hand the strength and address necessary for handling the sabre; 3, they accustom the horses to the sabre.

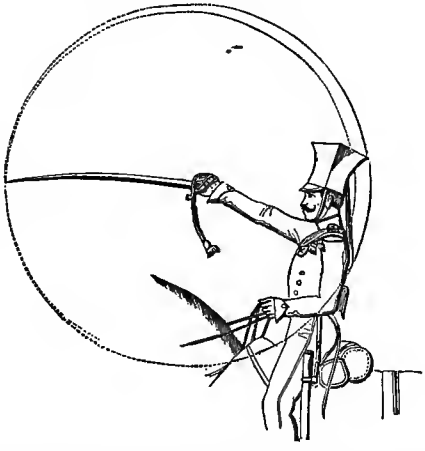
PREPARE TO MOULINET.—1 *time.*

(Fig. 8.) At this command, the recruit, being at guard, extends the right arm to its full length, at the same time raising it so as to bring the hand in front of the centre of the head, as high as the eyes, point to the front, edge upwards, blade horizontal, and perpendicular to the breast.

All the moulinets are made from the position just described, and upon their completion the position of guard is resumed.

The moulinets are made to *the left* and to *the right: i.e.* the circular movement of the sabre passes on the left or on the right side of the horse's neck.

Fig. 8.—The moulinets.



There are two moulinets: *the first* passes downwards along the body; *the second* passes upwards along the body.

The recruit being in the position of "*prepare to moulinet,*" to execute the *first moulinet,* the instructor commands:

FIRST MOULINET.

Make a moulinet to the left,—*i.e.* on the left side of the horse's neck,—raising the blade with the edge towards the body, the circular motion passing downwards along the left shoulder;

and after that, make a right moulinet,—*i.e.* on the right side of the horse's neck,—raising the point, the edge towards the body, and the circular movement passing downwards along the right shoulder; then another moulinet to the left, then again to the right, and, in the same manner, alternately on each side, until the command, *guard*, when the position of guard is resumed. The recruit being in the position of "*prepare to moulinet*," to cause him to execute the *second moulinet*, the instructor commands:

SECOND MOULINET.

Make a moulinet to the right, turning the wrist a little outwards, lowering the point, edge from the body, and passing the blade upwards, along the right shoulder; then make a similar moulinet to the left; and continue in the same manner, alternately on each side, until the command, *guard*.

In the execution of the moulinets neither the elbow nor shoulder should bend, but the movement is to be effected by the hand and wrist alone; the sabre should pass as far as possible from the horse's head, to avoid striking him, and as near as possible to the man's shoulder; the left arm is not moved.

At the commencement the instructor requires the recruit to count *one* at the end of each left moulinet, *two* at the end of each right moulinet, or the reverse; finally requiring him to accelerate the motion of the sabre to the utmost.

THE BLOWS.

Blows are of two kinds, *thrusts* and *cuts*.

They may be given in four directions: 1. To the *right front* *i.e.* against an antagonist obliquely in front of the right shoulder; 2. To the *left front;* 3. To the *right;* 4. To the *left*.

The thrusts and cuts should always be given together, *i.e.* first a thrust and then a cut. After each blow the position of guard is resumed.

For the blow to the *right front*, the instructor commands:

RIGHT FRONT THRUST AND CUT.—1 *time*, 4 *motions*.

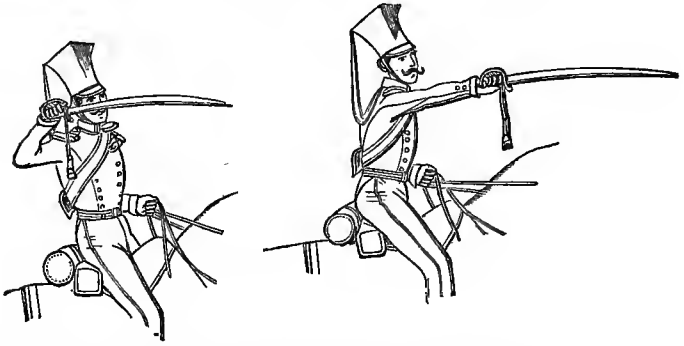
1. At the last part of the command, which is, *cut*, turn the eyes to the right front, raise the hand to the height of the right ear, and seven inches from it, the shoulder and elbow thrown well back, the thumb on the back of the gripe, point falling a little below the horizontal, and directed to the right front, edge upwards. (Fig. 9.)

2. Extend the arm rapidly to its full length, thrusting to the

right front, *i.e.* somewhat to the right of the horse's right ear; at the end of the thrust the right arm and the sabre are horizontal; the point, if any thing, a little below the horizontal. (Fig. 10.)

3. Without moving the arm, replace the thumb on the side of the gripe, turn the hand so as to bring the nails upwards, at the

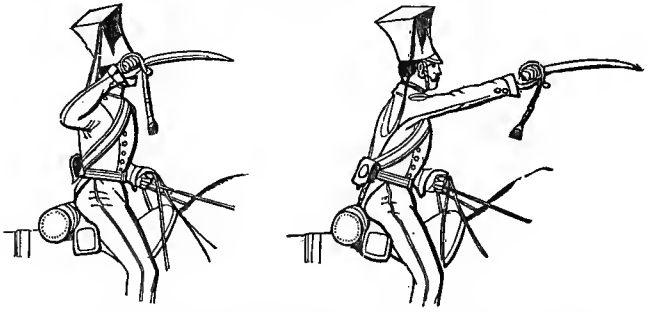
Fig. 9. Right front thrust. Fig. 10.



same time carrying the point well to the right; then, by a turn of the wrist, cut horizontally from right to left.

4. Turn the nails downwards, and by a turn of the wrist cut horizontally from left to right. At once resume the position of guard.

Fig. 11. Left front thrust. Fig. 12.



LEFT FRONT THRUST AND CUT.—1 *time*, 4 *motions.*

(Figs. 11 and 12.) Executed as the preceding blow, with the following differences: in the 1st motion the arm is raised as pre-

scribed for the blow to the right front, but the point and eyes are directed to the left front; in the 2d motion, thrust to the left front, *i.e.* somewhat to the left of the horse's left ear; the 3d and 4th motions, as in the blow to the right front, but given on the left side of the horse's head.

Fig. 13. Right thrust. Fig. 14.

RIGHT THRUST AND CUT.—1 *time*, 4 *motions.*

(Figs. 13 and 14.) 1. At the last part of the command, which is, *cut*, half face to the right in the saddle, at the same time place the arm and sabre in the position of first motion of right front blow, except that the eyes and point are directed to the right.

2. Thrust to the right, in a direction as nearly as possible perpendicular to the side of the horse.

3 and 4. As in the blow to the right front, except that the cuts are made in a direction to the right of the horse, and that, on resuming the guard, the recruit will sit straight in the saddle.

LEFT THRUST AND CUT.—1 *time*, 4 *motions.*

Executed as the preceding blow, with the difference that it is made on the left side of the horse; therefore, in the first motion the recruit makes a half face to the left in his saddle, and directs his eyes and point to the left, in a direction perpendicular to his horse; in the third and fourth motions he gives the horizontal cuts, as in the last blow, but on the left, and finally returns to the guard, resuming his seat square in the saddle.

THE PARRIES.

The parries are all made from the position of guard. After

every parry the position of guard is at once resumed, unless it is to be followed at once by a cut or thrust.

There are four parries: (*a*) that for the right side, or the *right parry;* (*b*) that for the left side, or *left parry;* (*c*) that for the head, or *head parry;* (*d*) that for the left shoulder and rear, or *left rear parry.*

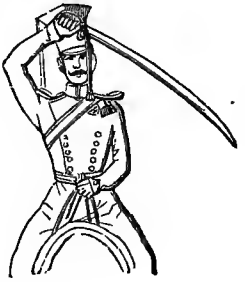
RIGHT PARRY.—1 *time,* 2 *motions.*

(Fig. 15.) 1. Grasp the sabre firmly, extend the arm to the right, the hand moving horizontally, the point at the same time describing a semicircle upwards, and, with the edge to the right, parry as strongly as possible the blow aimed at the right side.

2. Resume the position of guard.

Fig. 15.—Right parry.

Fig. 16.—Left parry.



LEFT PARRY.—1 *time,* 2 *motions.*

(Fig. 16.) 1. Raise the hand above, and about seven inches in front of, the eyes, the elbow somewhat bent, edge to the left, point downwards, and about fourteen inches outside of the horse's left shoulder, and parry as strongly as possible the blow aimed at the left side.

2. Return to the position of guard.

HEAD PARRY.—1 *time,* 2 *motions.*

(Fig. 17.) 1. Raise the arm quickly to its full length, the hand a little to the right, the sabre a little above the head, edge upwards, blade horizontal and parallel to the shoulders.

2. Resume the guard.

In this parry the sabre should be grasped with the utmost firmness, to prevent its being beaten down.

LEFT REAR PARRY.—1 *time*, 2 *motions*.

(Fig. 18.) 1. Turn the head to the left and rear, carry the right hand to the left shoulder, on which rest the back of the blade, the point to the left rear, the edge upwards.

2. Resume the guard.

Fig. 17.—Head parry.

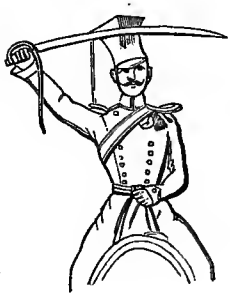


Fig. 18.—Left rear parry.

PARRIES AND BLOWS.

When the recruit is well instructed in the blows and parries separately, he should be taught to combine them, in the following manner :—

RIGHT PARRY AND CUT.—1 *time*, 2 *motions*.

1 Parry to the right, as already explained.

2. Cut once horizontally from right to left, as prescribed in the third motion of the blow to the right front, and resume the guard.

LEFT PARRY AND CUT.—1 *time*, 2 *motions*.

1. Parry to the left, as already explained.

2. Cut once horizontally from right to left, as prescribed in the third motion of the blow to the left front, and resume the guard.

HEAD PARRY AND THRUST.—1 *time*, 3 *motions*.

1. Parry for the head, as already explained.

2. Place the arm and sabre in the position of the 1st motion of blow to right front.

3. Thrust to right front, and resume the guard.

THE BLOWS AGAINST INFANTRY.

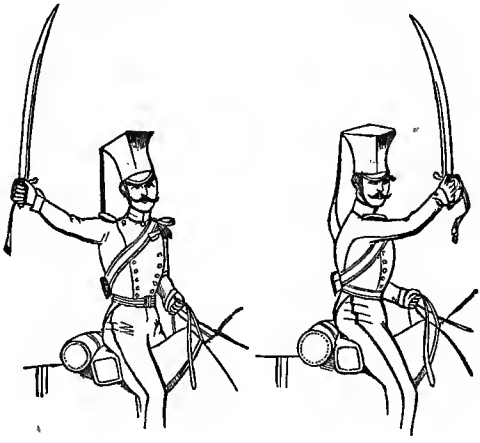
The cavalry soldier, when engaged against infantry, in open order, should endeavor to parry the bayonet on his right side, cut to the right and left, and thrust to the right.

AGAINST INFANTRY—RIGHT PARRY AND CUT.—1 *time*, 3 *motions.*

(Figs. 19 and 20.) 1. Half face to the right in the saddle, carry the right hand to the right and rear, arm nearly extended,

Against infantry.—Right parry.

Fig. 19. Fig. 20.



sabre grasped firmly, hand as high as the head, and over the croup of the horse; nails outwards, edge to the rear, point upwards, blade vertical.

2. Lower the point towards the rear, and parry the bayonet with the back of the blade by a rapid circular movement of the sabre and arm, so that, at the end of the movement, the right hand may be in front of the left shoulder as high as the head, and 10 inches from it, the nails towards the breast, point of sabre upwards, edge to the front.

3. Bear the weight of the body on the right stirrup, bend the body well down to the right, and, by a movement of the whole arm from the shoulder, cut downwards, from the head of the horse towards the croup; at once resume the guard.

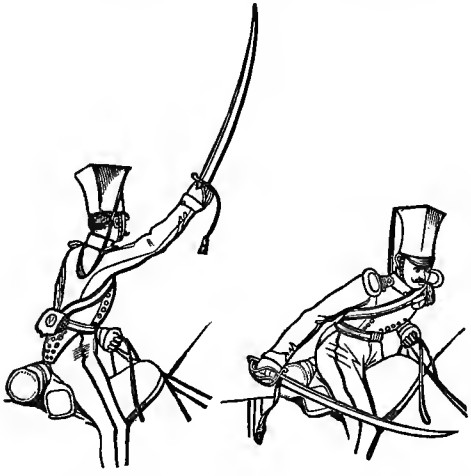
AGAINST INFANTRY—LEFT CUT.—1 *time*, 1 *motion*.

(Fig. 21.) Half face to the left in the saddle, extend the right arm to its full length, the hand opposite to and above the eyes, edge somewhat to the left, the point a little to the front; then, by a movement of the whole arm from the shoulder, cut circularly downwards, on the left side of the horse; at once resume the guard.

AGAINST INFANTRY—RIGHT AND LEFT CUT.—1 *time*, 2 *motions*.

1. Half face to the right in the saddle, and take the position described at the end of 2d motion of the "right parry and cut" against infantry, and at once cut against infantry, as prescribed in the 3d motion.

Fig. 21.—Against infantry. —Left cut. Fig. 22.—Against infantry. —Right thrust.



2. Instead of resuming the guard, at once half face to the left, and act as prescribed for the left cut against infantry; resume the guard.

AGAINST INFANTRY—RIGHT CUT AND THRUST.—1 *time*, 2 *motions*.

(Fig. 22.) 1. Half face to the right in the saddle, and act as directed in the first motion of the preceding blow.

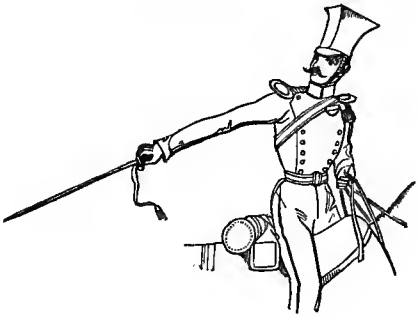
2. Bear the weight on the right stirrup, bend well down to the right, extend the right arm well downwards, and, with the back of the sabre upwards, thrust forward as nearly horizontally as possible; at once resume the guard.

In these cuts the recruit should sit firmly in the saddle, and make the half faces to the right and left quickly, easily, and without constraint.

B. The sabre exercise for the retreat.

In retreat the cavalry soldier should cut his pursuer to the right rear.

Fig. 23.—Right rear cut.



RIGHT REAR CUT.—1 *time*, 1 *motion*.

(Fig. 23.) Half face to the right in the saddle, cast the eyes well to the right rear, raise the right arm so as to bring the hand opposite to and at the height of the left shoulder, edge to the front, point upwards, cut horizontally to the rear by a movement of the sabre from left to right; at once resume the guard.

RIGHT REAR—CUT TWICE.

As the last blow, except that the cut is repeated before resuming the position of guard.

TO FORM A SQUADRON FOR THE SABRE EXERCISE.

Preparatory to the sabre exercise, the squadron, whether mounted or on foot, should first of all be ordered to call off. For this purpose the instructor commands:

FOR SABRE EXERCISE—CALL OFF.

At this command, each man of the right file turns his head to the left, that his comrades may hear him, and, in a loud, distinct tone, calls out 20, (twenty;) the men of the 2d file call out 15; those of the 3d file, 10; the 4th, 5; the 5th, "*stand fast;*" the 6th, 20; the 7th, 15; the 8th, 10; the 9th, 5; the 10th, "*stand fast;*" and in the same manner through the squadron to its left flank.

These numbers signify that at the command "sabre exercise —march," (which will be explained hereafter,) each man is to march forward the number of paces he called out, *i.e.* 20, 15, 10, and 5 paces, respectively, for the first four men of every five, the fifth standing fast. The non-commissioned officers in the front rank are to move forward 25 paces; those in the rear rank are to rein back into the line of file-closers, and with them fall back 5 paces behind the rear rank. Each man turns his head to the front as soon as he has called off. If the sabre exercise is to be performed in presence of an inspector, the calling off is done before his arrival. When the exercise is to be commenced, the front rank is marched forward 25 paces; the instructor then commands:

SABRE EXERCISE—MARCH.

At this command the men take their distances by moving forward, in each rank, the number of paces they respectively called off, as already explained.

When the exercise is finished, the instructor commands:

TO YOUR POSTS—MARCH.

At this command, the men who advanced 20 paces stand fast, the others move up, and dress on them in each rank.

The non-commissioned officers of the front rank rein back 5 paces into their places. The instructor then closes ranks by the usual commands.

During the exercise the officers place themselves 15 paces from the front rank, facing it.

THE SABRE EXERCISE IN CLOSE ORDER.

When attacking in close order, the sabre should always be carried in the position of *charge sabre.*

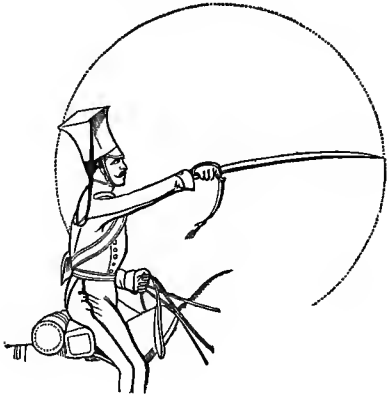
CHARGE SABRE.—1 *time,* 1 *motion.*

(Fig. 24.) Raise the right arm and extend it to the front,

the hand opposite the right eye, the blade perpendicular to the breast, the edge upwards, the point a little raised.

To pass from this position to that of *guard*, the command is, *guard*. If necessary, the command, *carry sabres*, may be given at once, without first coming to the guard.

Fig. 24.—Charge sabre.



In close order, all the motions of the sabre are made from the position of charge sabre, and on the completion of every movement the men at once return to that position.

RIGHT FRONT THRUST, PARRY, AND CUT.—1 *time*, 4 *motions*.

1 and 2. The recruit, being in the position of charge sabre, at once thrusts to the right front, as prescribed in open order.

3. Makes the head parry, as in open order.

4. Cuts vertically downward, on the right of the horse's neck, and resumes the position of charge sabre.

LEFT FRONT CUT, PARRY, AND THRUST.—1 *time*, 4 *motions*.

1. Commence the cut by the 2d motion of the 2d moulinet: *i.e.* lower the sabre along the left side of the horse's neck, raise it along the left shoulder, cut downwards to the left front, and resume the position of charge sabre.

2. Make the head parry.

3 and 4. Thrust to the right front, and resume the position of charge sabre.

RIGHT AND LEFT FRONT THRUST.—1 *time*, 2 *motions*.

1. Thrust once to the right front.
2. Thrust once to the left front, and resume the position of charge sabre.

In close order, too much care cannot be taken to make the cuts by the wrist alone, without moving the arm; they should be made as near the horse's neck as possible, to avoid striking the next man, or his horse.

As a conclusion to the sabre exercise, all the commands are here given, in the order in which they should be taught.

Commands for the sabre exercise in open order.

Guard.
Prepare to moulinet.
First moulinet.
Guard.
Prepare to moulinet.
Second moulinet.
Guard.
Right front thrust and cut.
Left front thrust and cut.
Right thrust and cut.
Left thrust and cut.
Right parry.
Left parry.
Head parry.
Left rear parry.
Right parry and cut.
Left parry and cut.
Head parry and thrust.
Against infantry—right parry and cut.
Against infantry—left cut.
Against infantry—right and left cut.
Against infantry—right cut and thrust.
Right rear cut.
Right rear cut twice.

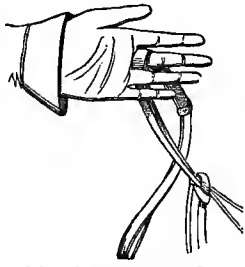
Commands for the sabre exercise in close order.

Charge sabre.
Right front thrust, parry, and cut.
Left front cut, parry, and thrust.
Right and left front thrust.

MISCELLANEOUS, FROM THE SCHOOL OF THE RECRUIT.

(Fig. 25.) When loading and firing the carbine, the snaffle-reins are knotted around the curb-reins, and allowed to hang loosely; the curb-reins are passed around the middle finger of the left hand, thus leaving the others free to manage the carbine.

Fig. 25.—Manner of holding the reins when using the carbine.



When the carbine is cast about, the butt is thrown on the right side of the horse, the left hand seizing it just above the tail-band.

Skirmishers armed with lances, when using the carbine, carry lances at a rest and sabres in the scabbards; skirmishers who have no lances have the sabre drawn and suspended from the right wrist by the sabre-knot when using their carbines.

THE CHARGE.

At the command, *charge*, the rider, without changing his seat, presses a little harder on the stirrups, throws the weight of his body backwards, and prepares the horse, as explained, for the gallop; then, giving him a free rein, he urges him to his greatest speed by the pressure of his legs and spurs.

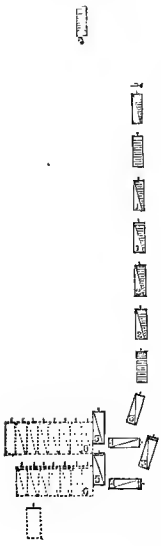
SCHOOL OF THE PLATOON.

In the tactics, the platoon is supposed to consist of 12 or more files, always in two ranks. The rear rank is one pace (3 feet) from the front rank, and the file-closers at the same distance behind the rear rank.

In addition to the 12 files, there are supposed to be with the platoon 1 officer as instructor, 1 non-commissioned officer on each flank of the front rank, 2 non-commissioned officers as file-closers, and 1 trumpeter.

Preparatory to mounting, the platoon being formed with closed ranks, the men call off in each rank by twos.

Fig. 26.



At the command, *prepare to mount*, Nos. 1 of the front rank lead forward 4 paces, (of 3′ each,) Nos. 2 of the rear rank, and the file-closers, fall back the same distance, the non-commissioned officers on the flanks of the front rank lead forward 8 paces. After mounting, upon the command, *form ranks*, the Nos. 2 of each rank move up alongside of Nos. 1, the non-commissioned officers resume their proper places, and the rear rank is closed up on the front rank.

The dismounting is effected in a similar manner.

The men, being mounted, call off in each rank from right to left, and then in each rank by threes.

Column may be formed: by file, by twos, by threes, and by sixes.

In the column by twos, each rank consists of the men of the same file, each rear-rank man riding alongside of his front-rank man.

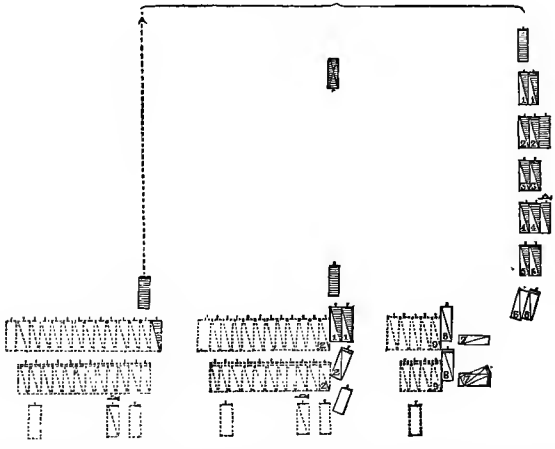
In the column by sixes, each rank consists of the men of the same set of threes, the three rear-rank men riding abreast of their three front-rank men.

(Fig. 26.) To break the platoon by file, from a halt: at the

preparatory command, the right guide places himself in front of the 1st file, the trumpeter in front of the right guide; at the command, *march*, the trumpeter, guide, and first file move straight forward; the men of the other files, in succession, advance one pace, halt, turn to the right, (on the horse's hind-legs,) move to the right in the direction of the front of the platoon, and turn individually to the left when arriving behind the head of column.

Fig. 27 shows the manner of breaking by twos.

Fig. 27.



To break by threes, the first set of threes march straight forward, the rest of the men wheel to the right by threes in each rank, move forward, and, upon arriving behind the head of column, wheel to the left by threes, in each rank. Fig. 28 shows the formation of a platoon of 11 files, in column by threes.

Fig. 29. To break by sixes, at the preparatory command the right guide passages 3 yards to the right, the rear-rank men of the first set of threes oblique to the right and place themselves on the alignment of the front rank, between the right guide and their front-rank men; at the command, *march*, the right guide and the first set of threes (formed in one rank, the rear-rank men on the right) move straight forward, the rest of the men wheel to the right by threes in each rank, move forward, and wheel to the left by sixes when the croups of their horses are on the prolongation of the left flank of the column.

Fig. 28.

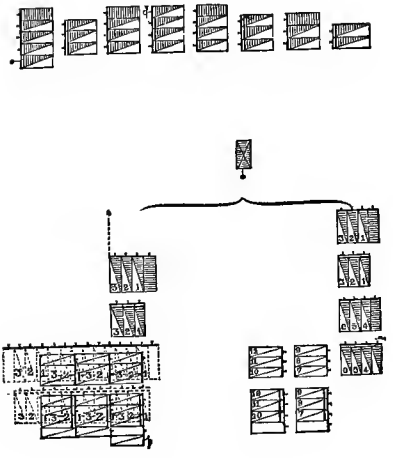


Fig. 29.

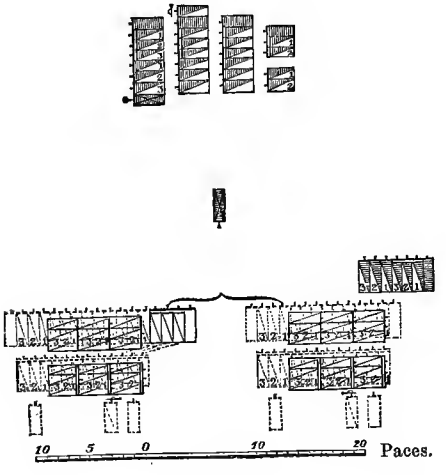


Fig. 29 shows the formation of a platoon in column by sixes, the platoon consisting of 11 files.

On the march, the platoon is broken into column according to the same principles; except that to break by file or by twos, in doubling the gait, the right file moves straight forward at the new gait, and the rest of the platoons at once oblique to the right, each file entering the column in succession.

All these movements are executed by the left flank, by inverse means. When the platoon, broken into column, is to form to the front, on the right or left, or to the right or left into line, the leading subdivision marches platoon distance before halting.

The platoon being in column by file, right in front, at a halt, to form column by twos: at the command, *march*, each front-rank man moves forward his horse's length and halts; each rear-rank man moves up on the right of his front-rank man and halts; then the column closes up on the leading subdivision.

To form from column by file into column by threes: at the command, *march*, Nos. 1 of both ranks move forward a horse's length and halt; Nos. 2 and 3 of each rank oblique to the left, and form on the left of Nos. 1; then the column closes up on the leading set of threes.

Fig. 30. To form from column by file, into column by sixes: at the command, *march*, Nos. 1 of the front rank move forward a horse's length and halt; Nos. 2 and 3 of the same rank oblique to the left, and form on the left of Nos. 1, in the order of their numbers; the rear-rank men oblique to the right, and form on the alignment of the front rank, also in the order of their numbers, from right to left; the ranks of sixes, thus formed, then close up on the head of the column.

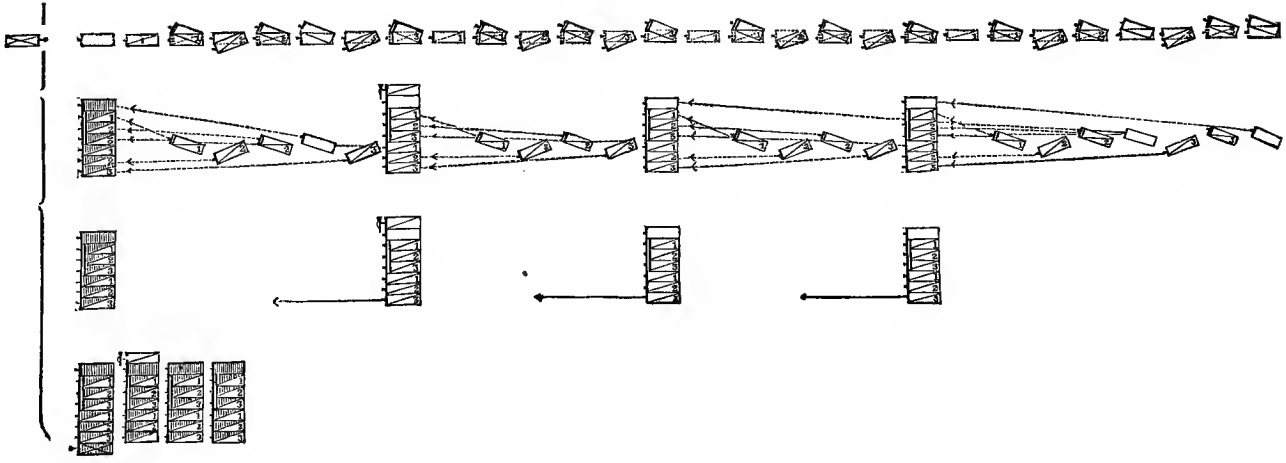
If the column is in march, the front is increased according to the same principles; *i.e.* each new subdivision is formed at the original gait; then those in rear close up on the head of column by doubling the gait.

The front is decreased, whether the column is in march or at a halt, in a manner similar to that pursued in the United States tactics.

SCHOOL OF THE SQUADRON.

The squadron is divided into two half squadrons and four platoons. The platoons are numbered from right to left, and each platoon preserves its original number, whatever position it may occupy in line or in column. Each platoon is counted off: (*a*) by twos; (*b*) from right to left; (*c*) by threes; this is done under the direction of the commandants of platoons, before the

Fig. 30.

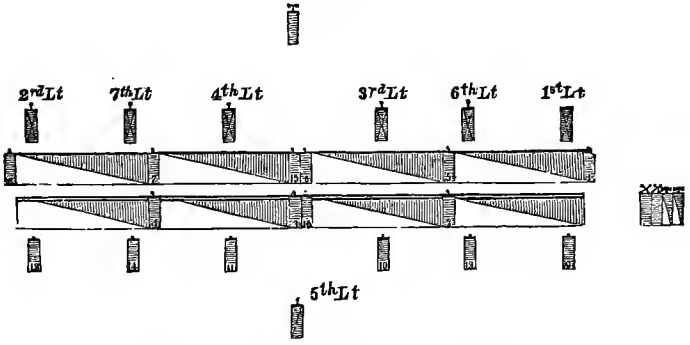


squadron is formed. If there are odd files in the 4th platoon, they are posted on its right.

COMPOSITION OF THE SQUADRON.

The minimum strength is as follows: 1 captain, commanding; 4 commandants of platoons; 16 sergeants; 3 trumpeters; 96 corporals and privates. As a general rule, the average strength of the squadron is 120 corporals and privates, or 60 files.

Fig. 31.



POSTS OF THE OFFICERS AND SERGEANTS.

Fig. 31. The squadron being deployed, the officers are posted as follows: the captain commanding, at platoon distance in front of the centre of the squadron; the commandant of the 1st platoon, 1 pace in front of the 2d file from the right of his platoon; the commandants of the 2d and 3d platoons, 1 pace in front of the centres of their platoons; the commandant of the 4th platoon, 1 pace in front of the 2d file from the left of his platoon; if there is a 5th subaltern, he is posted, as a file-closer, 3 paces in rear of the centre of the line of non-commissioned file-closers; if there is a 6th subaltern, he is posted 1 pace in front of the 2d file from the left of the 1st platoon; if there is a 7th subaltern, he is posted 1 pace in front of the 2d file from the right of the 4th platoon.

Subalterns command platoons according to their ability, and not according to seniority; the 1st and 4th platoons being considered the most important.

If there are not enough officers present to supply commandants of platoons, the deficiency is made good by the most capable sergeants.

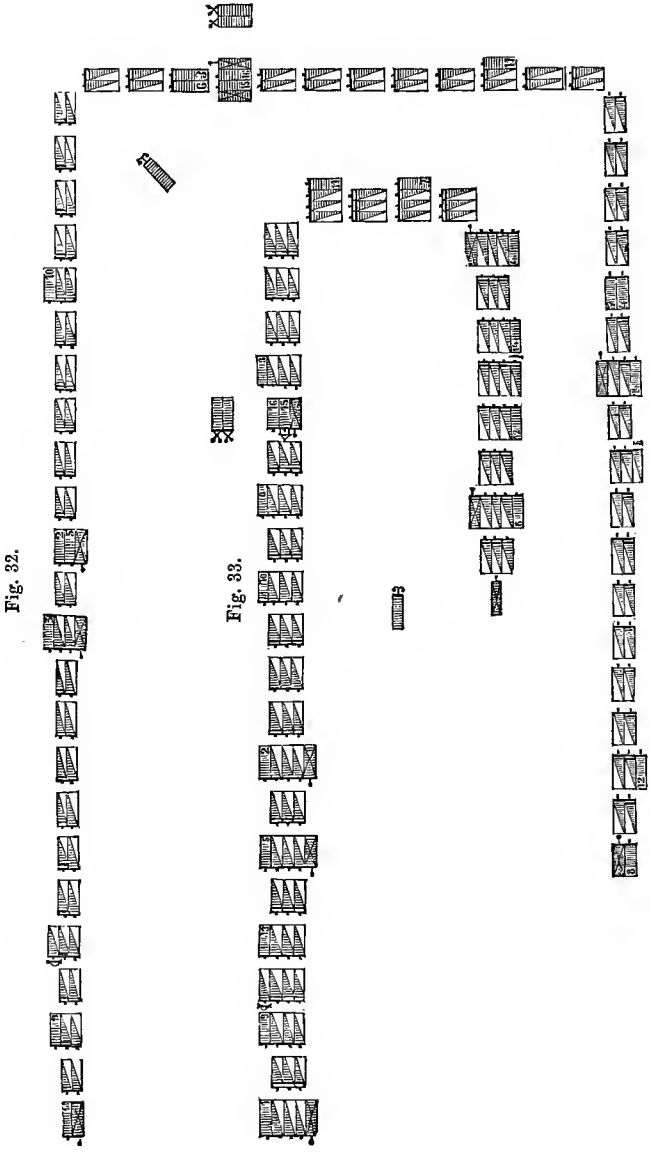


Fig. 32.

Fig. 33.

If there is no officer to act as file-closer, this position is not filled by a sergeant.

Fig 31 gives the positions of the different sergeants in line; No. 15 is the standard-bearer, in standard-squadrons, and No. 16 is his assistant; in squadrons without standards, No. 15 is posted in rear of the 2d file from the left of the 2d platoon, and No. 16 in rear of the 2d file from the right of the 3d platoon; the non-commissioned file-closers are 1 pace behind the rear rank. In standard-squadrons having but 14 sergeants, No. 13 is the standard-bearer, No. 14 his assistant.

No. 6 carries the squadron guidon.

There must always be at least one file-closer for every platoon; if there are not enough sergeants for this purpose, corporals are detailed to supply the deficiency.

The sergeants may be posted, by the commander of the squadron, without regard to their relative rank.

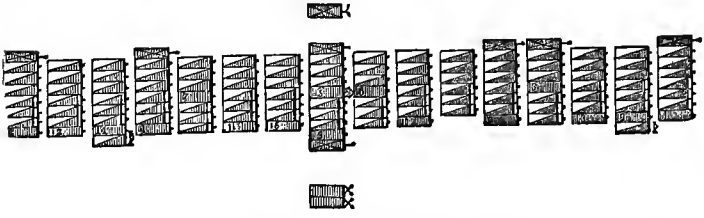
Trumpeters are posted, either in one rank, at five paces on the right of the rear rank, or in rear of the 4th files from the right of the 1st, 4th, and 2d platoons; the latter position in preference.

In the engravings accompanying this report, extracted from the Russian tactics, two drummers and two trumpeters are usually represented; these drummers refer only to the dragoon regiments.

The men armed with rifled carbines, (four in each platoon,) who are to act as skirmishers, always form the flank files of the platoons; these files should always be full.

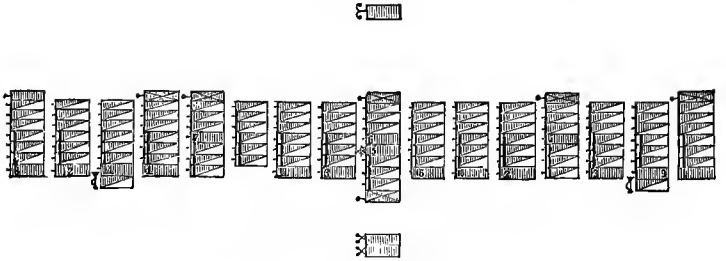
Figs. 32 to 38 will sufficiently explain the formation of a squadron in column by twos, threes, sixes, platoons, and half squadrons, as well as the posts of the officers and non-commissioned officers.

Fig. 34.



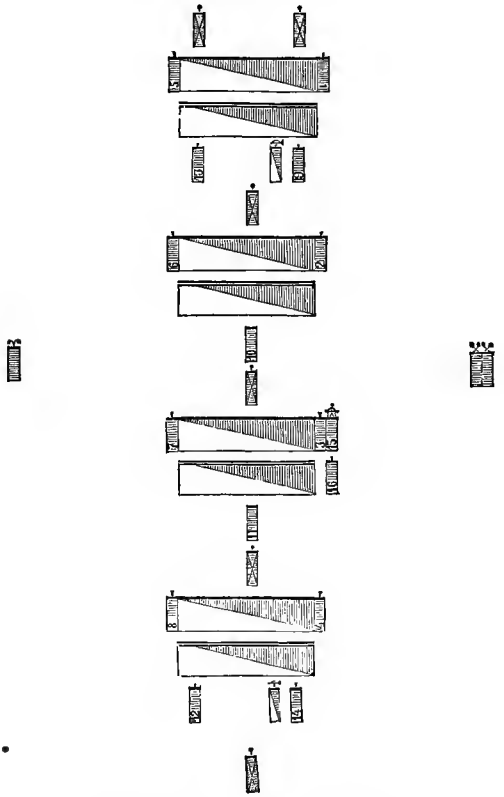
Column by sixes—Right in front.

Fig. 35.



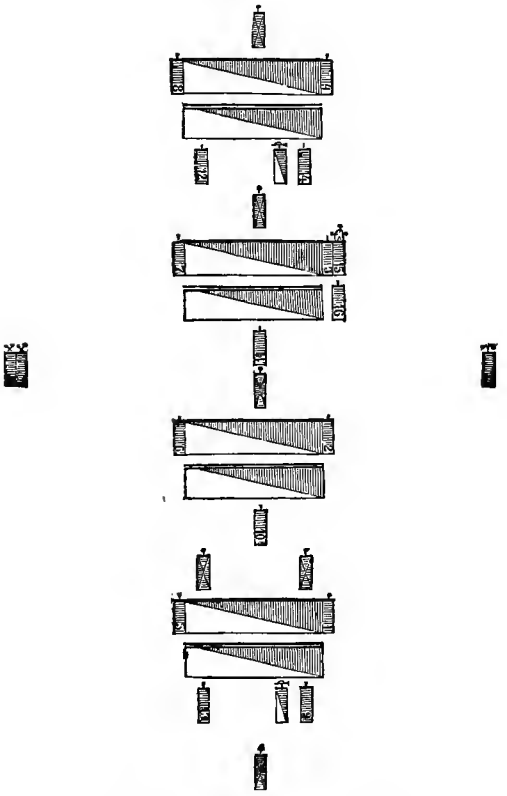
Column by sixes—Left in front.

Fig. 36.



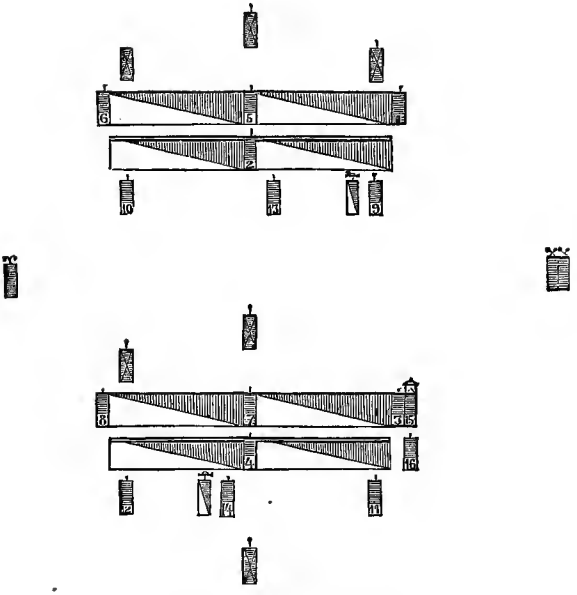
Column by platoons—Right in front.

Fig. 37.



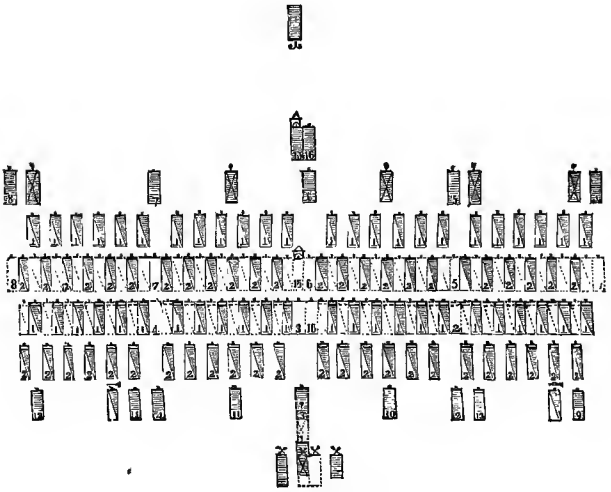
Column by platoons—Left in front.

Fig. 38.



Column by half-squadrons.

Fig. 39.



TO MOUNT AND DISMOUNT THE SQUADRON.

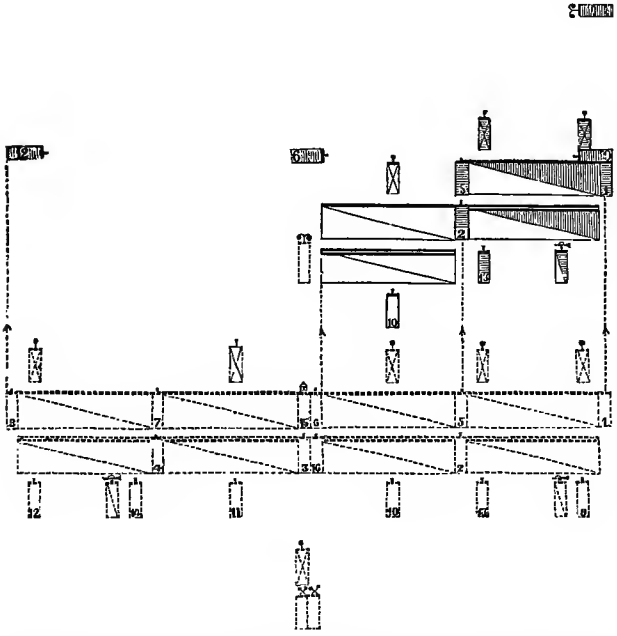
To mount, the squadron is formed with closed ranks, all the officers dismounted except the commander of the squadron. Fig. 39 shows the positions of all persons, both in mounting and dismounting; the principles already explained in the school of the platoon are observed in this case.

OF VOCAL COMMANDS.

These are of two kinds: those of preparation, and those of execution.

The first are uttered slowly, every syllable being clearly pronounced; the latter are uttered briefly and abruptly.

Fig. 40.



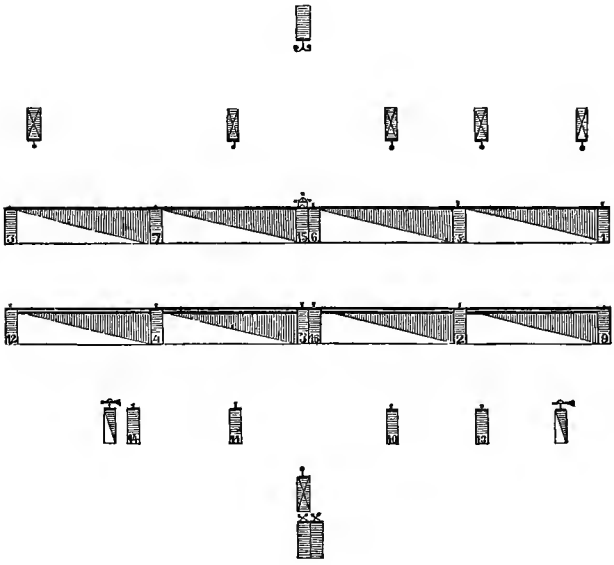
The commander should modulate his voice in proportion to the number of men who are to execute the command, so that every word may be heard. In the text, the tonic accent (1) is placed

over the syllables that are to be accented and uttered slowly; the hyphen (-) indicates the passage from the preparatory to the executive command.

Commands indicating the gaits are always given with the cautionary command, and before the word—march.

The commanding officer should always designate the gait.

Fig. 41.



PRINCIPAL GUIDES.

Sergeants Nos. 6, 9, and 12 are the principal guides of the squadron; all the sergeants should, however, be instructed in the duties of principal guides, that they may be able to fulfil them in case of necessity.

Fig. 40 shows the positions of the principal guides in the alignment of a squadron, to the right, by platoons.

In mounted squadrons the men are arranged, according to the height of men and horses, from right to left in the right half squadron, and from left to right in the left half squadron.

The front rank is composed of the men who are the best looking, best riders, and most prompt, with, as far as possible, the

best and most thoroughly trained horses. Prompt and well-instructed men, with the best horses, are placed on the flanks of platoons and threes.

SQUADRON WITH OPENED RANKS.

The ranks may be opened either by causing the front rank to move forward, or the rear rank to rein back.

Fig. 41 shows the formation of the squadron with open ranks; the commandants of platoons, facing the squadron, are six paces from the front rank; the ranks six paces apart; the file-closers six paces behind the rear-rank.

Columns by files, twos, threes, and sixes, are formed and broken as prescribed in the school of the platoon.

The front of the column may be increased either in all the platoons at the same time, or, beginning with the head of the column, by the different platoons in succession. The front of the column is decreased always by the platoons in succession.

When the squadron is in line, to break it, by the right, by platoons to the front, the 1st platoon marches straight to the front, all the others wheel to the right on a fixed pivot; the 2d platoon then wheels to the left and follows the 1st; the 3d and 4th move forward and wheel to the left, as each arrives where the 2d wheeled to the left.

MARCHING IN LINE.

A. When marching in line, the alignment of the squadron will depend upon that of the officers in front of the platoons; it is therefore required that these officers should be frequently exercised in marching in line, at the proper intervals, to the front and obliquely, at all gaits; since absent officers are to be replaced by sergeants, the latter are also exercised in the same manner.

B. Before marching in line with closed ranks, the squadron is exercised with the ranks opened to squadron distance, the front rank commanded by the senior subaltern, the rear rank by the second subaltern.

C. The squadron is exercised at marching with the flank files of the platoons and the intermediate sergeants, thrown forward about 20 paces.

D. In starting or changing gait, the guide moves gently, to avoid agitation in the ranks.

E. The march in line should not be attempted at a trot until well done at a walk; after being properly done at a trot, it is executed at a gallop, the gait being changed on the march.

OF COLUMNS.

Right columns are those right in front; left columns are those left in front.

There are three kinds of columns: 1, columns with distance; 2, close columns; 3, marching columns, or columns in route.

In every kind of column the distance is measured from the fore-feet of the horses of one subdivision to the fore-feet of the front-rank horses of the next subdivision.

In a right column the guide is left, in a left column it is right.

The object of a column with full distance is that the troops composing it may form line in every direction; therefore the distance between the subdivisions must be equal to their respective fronts.

The object of a close column is, by decreasing its depth to execute movements conveniently and rapidly. Close columns are formed by half squadrons and by squadrons; the distance is 15 paces; the formation of these columns is explained in the school of the regiment.

The object of a column in route is to effect a march conveniently. According to the width of the road, this column is formed by platoons, sixes, threes, twos, or files; in preference, by platoons, when the road permits.

The direction of a column in march is changed as in the United States tactics; but, in order to perfect the instruction of both ranks, the column by platoons is formed in single ranks, at platoon distance, in the first lessons.

To form from column by platoons, or half squadrons, into line to the front or rear, or to increase the front of a column by platoons, each platoon obliques, instead of making half wheels, *e.g.:*

(Fig. 42.) To form front into line from a column of platoons, right in front, the 1st platoon marches forward platoon distance and halts, the others oblique to the left, by the individual oblique march, and move to the front when opposite their respective places in line.

To form on the right or left into line, the leading platoon moves forward platoon distance, after having finished its wheel.

OF ATTACKING.—THE ATTACK, OR CHARGE, IN CLOSE ORDER.

The general rules for executing a charge in close order are the same as for an advance in line.

The command of execution for a charge is *march, march.*

At this command the officers and the front rank charge sabre.

During a charge all commands, after that of *march, march,* are repeated by the commandants of platoons.

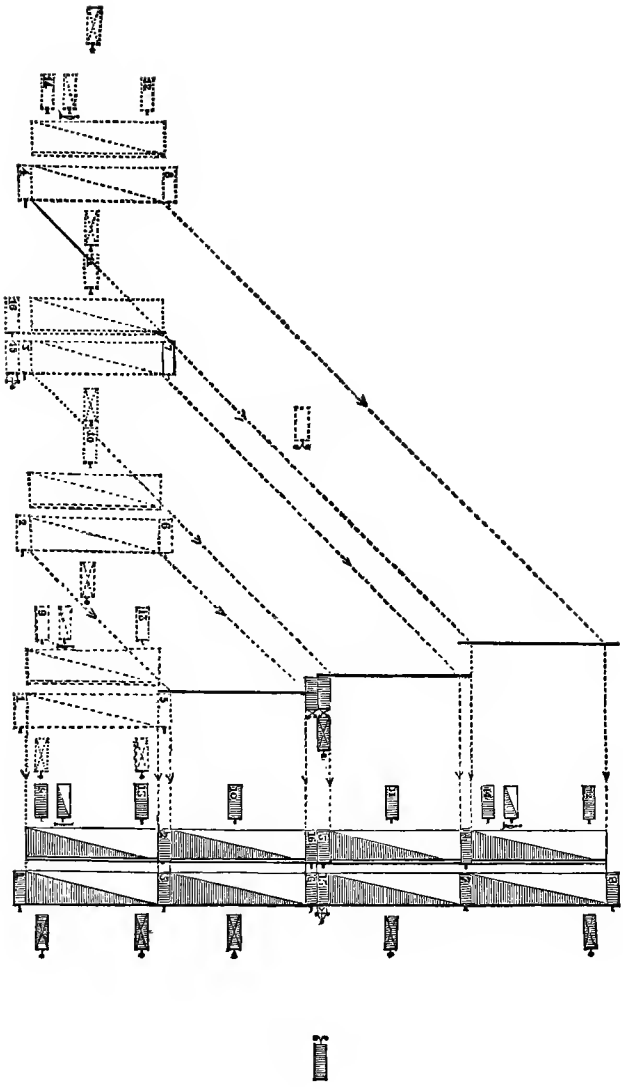


Fig. 42.

A charge should not extend over more than eighty paces; the nearer a regiment of cavalry can approach the enemy at a trot, the more violent will be the shock; but the farther from the enemy the command *march, march,* is given, the weaker will be the shock, and the greater the disorder among the horses. In order to save the horses, they should, if possible, before halting them after a charge, be brought down to a trot.

The charge is first taught by platoon, and afterwards by squadron. To execute the charge by platoon, the squadron commander places himself 300 paces in front of the squadron, and directs the commandant of the first platoon to execute the charge; this officer moves his platoon fifty paces at a walk, then 100 at a trot, fifty at a gallop, charges eighty paces, and halts his platoon abreast of the captain. The charge by squadron is executed in a similar manner, the captain leading the charge.

At the command *trot,* or *walk,* after the charge, the officers and the front rank carry sabres.

The troops are also taught to charge directly from a halt. During the charge, at the command *march, march,* the standard-bearer falls back into the line of file-closers, the assistant behind him; at the command *halt,* they resume their places in line. During the charge, the rear-rank men are to cover their file-leaders, and neither crowd up on them nor fall back.

THE CHARGE IN OPEN ORDER.

This is effected by one half squadron. (Fig. 43.)

In open order the half squadron is formed in two ranks, and occupies a front equal to that of five platoons in close order. When deployed in open order the officers and sergeants are posted as follows: the commander of the squadron always follows the movements of the half squadron detailed for duty in open order, and places himself where he deems necessary, having a trumpeter with him; if there is an officer with the squadron as file-closer, he accompanies the squadron commander, to carry his orders; the commandants of platoons are in the front rank; the sergeants are in their usual places, except that the file-closers are ten paces behind the rear rank. The other half squadron constitutes a reserve, and holds itself at 150 paces in rear of the line, deployed in open order; it never retires without special orders. The standard remains with the reserve.

For the charge in open order the signal "attack" is sounded, and then "disperse." If the charge is to be made from a halt, then at the first signal the designated half squadron moves forward at a trot, and at the second signal the commander orders

disperse; if the squadron is on the march when the first signal is sounded, the attacking half squadron continues moving at the original gait, while the reserve halts. At the command *disperse*

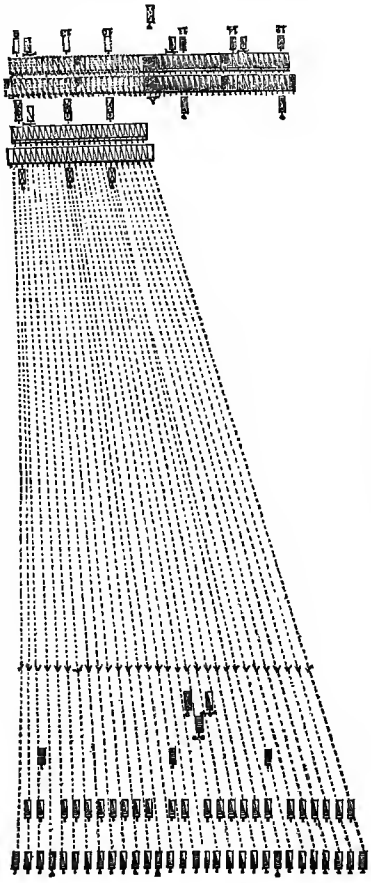


Fig. 43.—Charge in open order.

the men charge sabres and disperse as follows: if it is the right half squadron which is to disperse, the right guide is the guide of the movement, and moves straight forward at a hand

gallop; the rest of the men gain ground to the left and front at the charging gait, until the left file of the second platoon extends to platoon distance to the left of the left flank of the reserve; (this is done to cover the intervals when several squadrons are formed in one line.) If it is the left half squadron which deploys, then the left guide is the guide of the movement, and the right file extends to platoon distance beyond the right file of the reserve. When the outer flank has extended sufficiently, the whole line moves straight forward at a charge, the men using their pistols and sabres, not paying attention to the alignment, but taking care to preserve sufficient intervals for a free use of their weapons. At the signal *halt*, they halt and dress on the centre, the rear rank placing themselves ten paces behind their front-rank men.

The skirmishers may be assembled either on the reserve or on the guide of the line; in either case it is at full speed; and in the first case the men fall in without regard to place, merely endeavoring to get into the proper rank and platoon. The men are instructed in the charge in open order, first at a walk, afterwards at a trot, gallop, and charge.

ECHELONS.

The squadron is exercised in advancing by echelons of half squadrons, the distance between the echelons being at least equal to the front of a half squadron. The advance is by alternate half squadrons, or occasionally by both advancing, in echelon, simultaneously.

A retreat is always conducted by half squadrons, and at a walk, or trot. If the right half squadron commences the movement, it wheels to the right about by platoons, moves about half squadron distance to the rear, and again wheels by platoons to the right about; on this, the left half squadron wheels to the left about by platoons, moves squadron distance to the rear, and then again wheels to the left about by platoons. The standard remains with the left half squadron.

SKIRMISHERS.

The open order of battle is a chain of skirmishers, with a reserve in its rear. The purpose of the chain of skirmishers is to watch the movements of the enemy, to weaken and harass him by its fire, and thus to prepare the way for the success of the main body in close order, or else to cover its movements.

The reserve is to support and reinforce the chain, and to

serve as a rallying-point for the skirmishers; it should therefore be in rear of the skirmishers, and follow their movements.

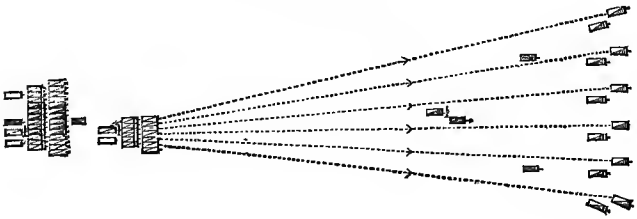
Commanders of parties detailed as skirmishers will employ vocal commands in preference to the trumpet signals; the latter will be employed only when the skirmishers are already deployed.

To avoid the possibility of mistakes, commanders ordering their trumpeters to sound any signal will always indicate it by its name, and not by its number.

The Russian system of instruction for mounted skirmishers gives in great detail the movements for their deployment, advance, and retreat; change of direction and position; firing, extending and closing intervals, assembly, relief, &c.

If a platoon of 12 files is detailed for skirmishing duty, 6 files are deployed, and 6 are detailed as a reserve. The commandant of the platoon, one of the guides, a file-closer, and a trumpeter, accompany the skirmishers a little in rear of the line; the other guide commands the reserve, which he holds at 100 yards from the line of skirmishers.

Fig. 44.—Skirmishers.



(Fig. 44.) When the line is halted, each rear-rank man places himself so that his horse's head shall be 1 pace to the rear and right of the tail of the horse of his front-rank man; the interval between the files depends upon circumstances.

To fire at a halt.—No. 1 of the front rank, in each set of threes, advances 20 paces at a walk, halts, turns his horse's left side obliquely towards the enemy, fires, and returns at a trot to the place vacated by his rear-rank man, who has in the mean time taken the front-rank man's original position. As soon as No. 1 has fired, the front-rank No. 2, in each set of threes, advances 20 paces, but does not fire until No. 1 has retaken his place in the line; when No. 3 has fired, in the same manner the rear-rank No. 1 fires, &c.

To fire advancing.—This is executed according to the same

principles; the line continuing to move forward at its original gait, while the men who are to fire advance by doubling the gait.

To fire retreating.—The whole line halts, and faces the enemy; Nos. 1 of the front rank fire, come to a right about, and retire at a walk, loading their pieces; as they pass their rear-rank men, the latter make a right about, and follow at 1 pace to the right rear of their front-rank men; when they have retired 30 paces, each makes a right about, and halts, facing the enemy, the rear-rank men now nearest the enemy.

As soon as Nos. 1 have executed this, Nos. 2 do the same; then Nos. 3; then the rear-rank Nos. 1 fire, and so the movement is continued.

Fig. 45 gives an example of the arrangement of 2 squadrons detailed as skirmishers in front of a regiment of 6 squadrons; in each of the 2 squadrons a half squadron is held in reserve, the other platoons being deployed as already explained; each of these platoons holds one-half of its force in reserve.

The chain of skirmishers should always be continuous, unless there is artillery in rear of it; it should overlap the body it covers about 20 paces on each flank, and have its own flanks somewhat thrown back.

When it becomes necessary to dismount parties of cavalry for the purpose of holding or carrying some post, Nos. 2 of each rank remain mounted, and hold the horses of Nos. 1 and 3.

Lancers are not dismounted if it can be avoided; but if it is necessary, then only one-half the men dismount, and place their lances in the left stirrup boots of the men remaining mounted, who pass the sling over the left arm.

In actual service, the officers and non-commissioned officers must watch, that, when the signal to commence firing is given, only those men fire who see the enemy within suitable range. To prevent accidents, the men should never cock their pieces until their turn to fire arrives. Officers and sergeants with the chain and reserves *carry* sabres. Whilst dispersing, the sergeants and men charge sabres, or lances; but at the command *halt*, both ranks rest lances, or drop sabres, (allowing them to hang from the wrist by the sabre-knot,) and advance carbine or raise pistol.

THE COLUMN OF ATTACK.

Before passing to the school of the regiment, it is necessary to explain the column of attack. It must first be stated that in the Russian cavalry 2 squadrons form a division, commanded by a field officer; each division in a cavalry regiment partially corresponding to a battalion in an infantry regiment in a tactical

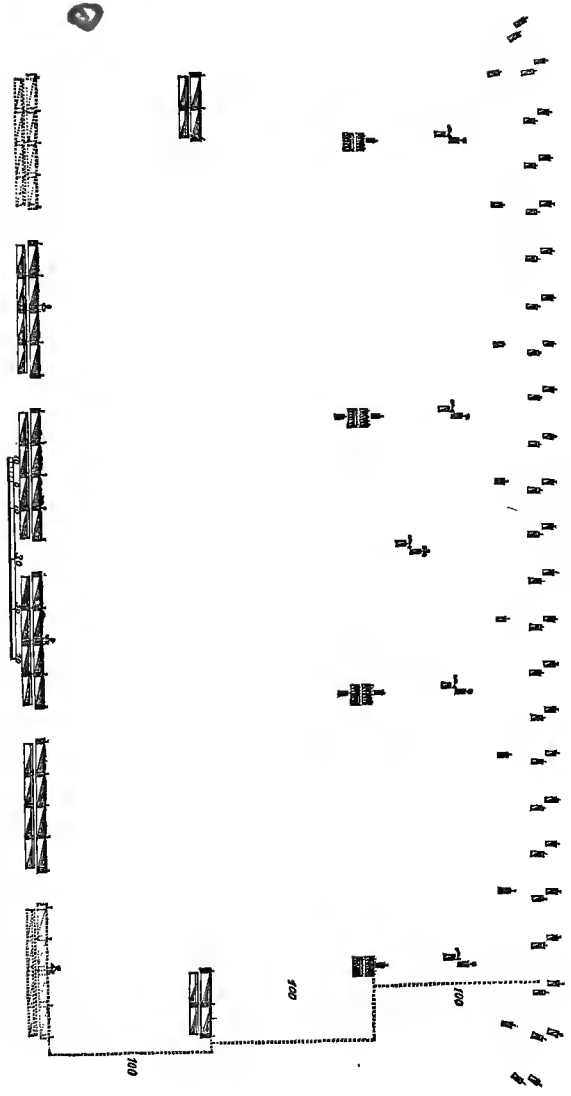


Fig. 45.

sense; in line, the interval between the 2 squadrons of a division is the front of a platoon. The column of attack (so called) is, in fact, a column of manœuvre, and is nothing more than a division formed in double column on the centre by half squadrons at platoon distance, thus: the 4th platoon of the 1st squadron and the 1st platoon of the 2d squadron (having closed in on each other) form the head of the column; the next subdivision is composed of the 3d platoon of 1st squadron and the 2d of the 2d squadron, &c.

Fig. 46 shows the manner of forming column of attack from a halt.

Fig. 47 shows the manner of forming column of attack advancing.

Fig. 48 shows the manner of forming column of attack retreating, the division having wheeled about, by platoons, before commencing its retreat.

To deploy the column, the platoons of the 1st squadron oblique to the right, those of the 2d squadron to the left; in deploying from a halt, the leading platoons gain platoon distance to the front and half platoon distance to the right and left, respectively.

SCHOOL OF THE REGIMENT.

Before commencing the drill of the regiment, the colonel is required to exercise the officers without the men; for this purpose the commandants of platoons are placed in one rank, at their proper intervals, (as if in front of their platoons,) the commanders of squadrons and divisions, also, in their proper places; and in this position they are carried through the various manœuvres, and taught to preserve their intervals and alignment; any absent commandants of platoons are replaced by sergeants.

Regiments of cavalry consist of 6, 8, or 10 active squadrons.

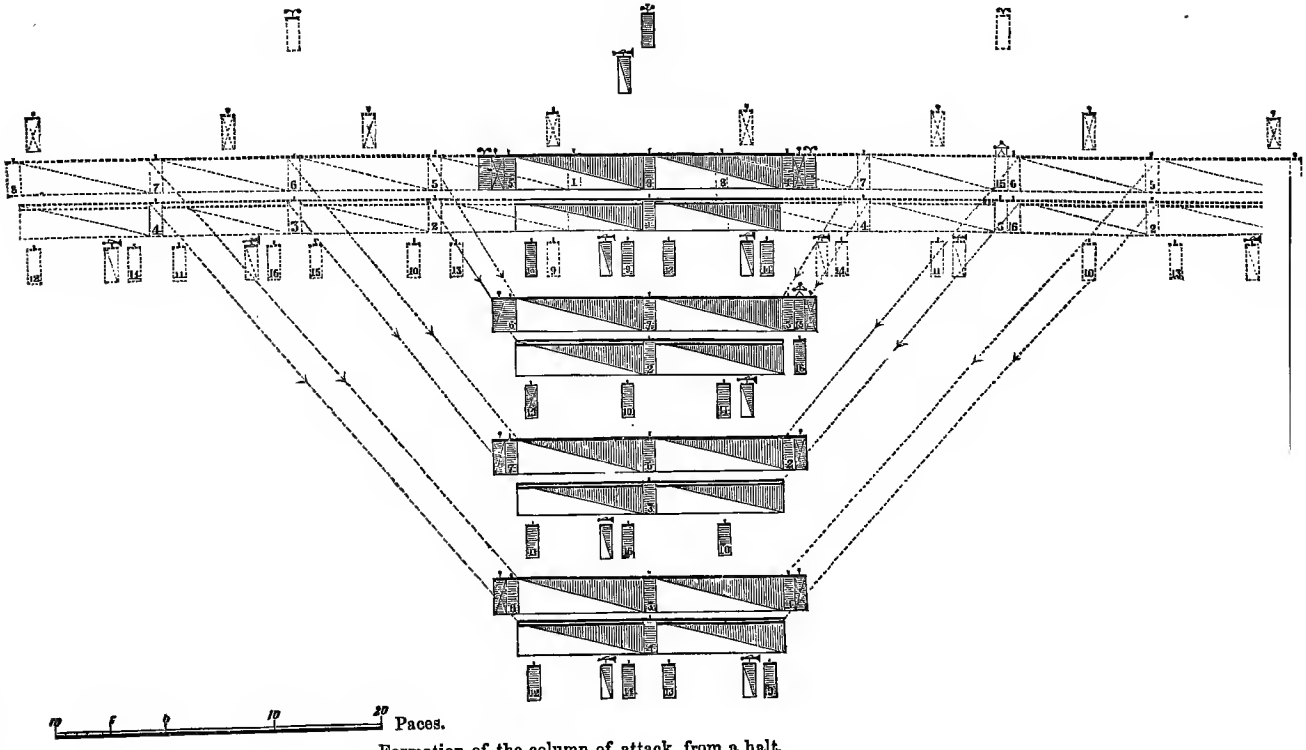
In each regiment, the squadrons are numbered in regular series, from right to left.

In regiments of 8 squadrons, the 7th and 8th are called flanker squadrons, and, when necessary, act as skirmishers; in regiments of 10 squadrons, (dragoons,) the 9th and 10th squadrons are armed with lances, are called lancer squadrons, and act as skirmishers.

In each regiment, the 1st and 2d squadrons form the 1st division; the 3d and 4th squadrons form the 2d division; the 5th and 6th squadrons form the 3d division; the 7th and 8th squadrons form the 4th division; the 9th and 10th squadrons form the 5th division.

It may be well here to repeat, and call attention to the fact,

Fig. 46.



Formation of the column of attack, from a halt.

Fig. 47.

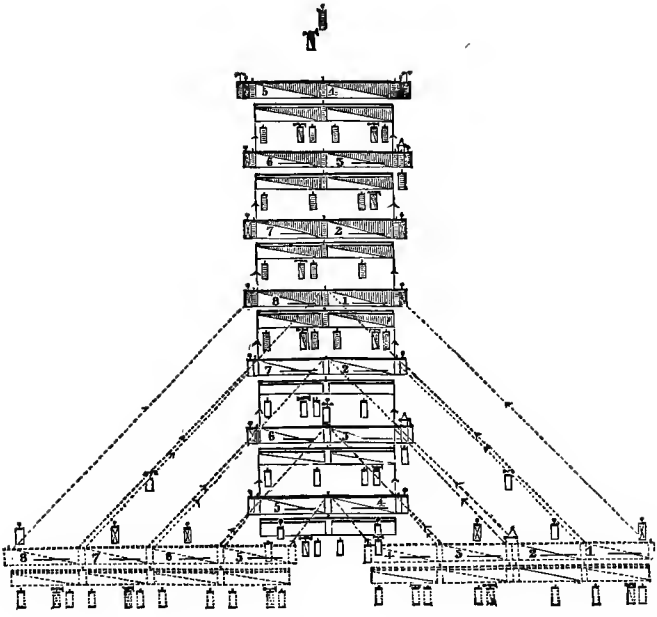
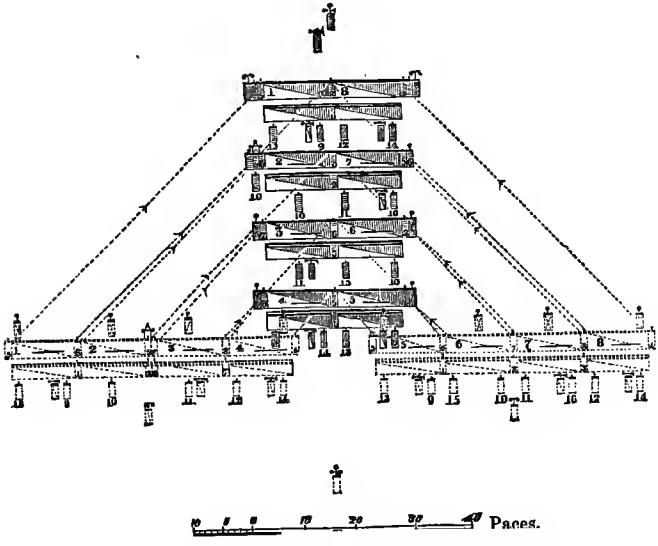
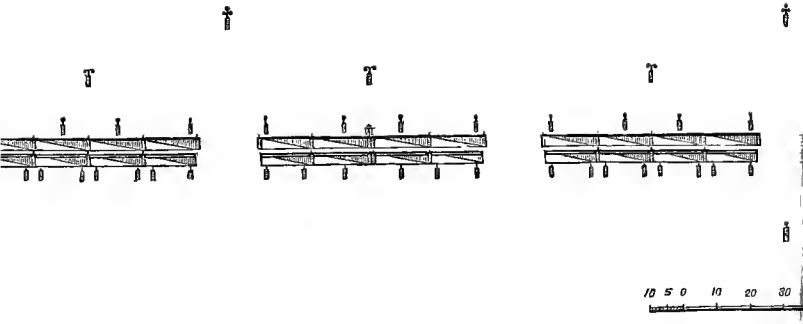
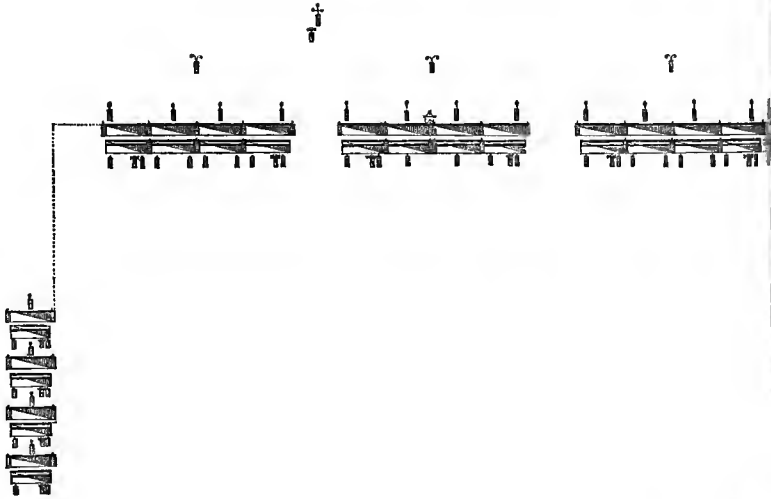


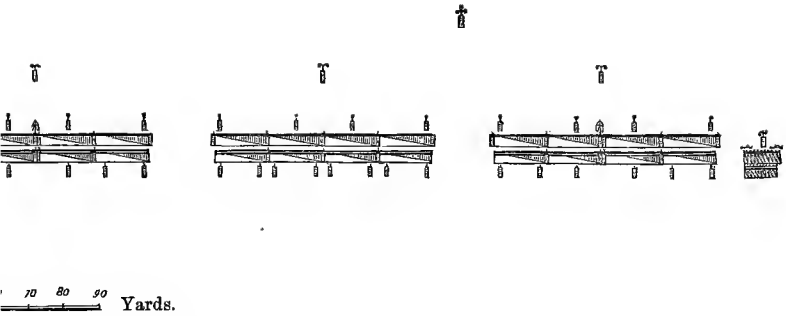
Fig. 48.



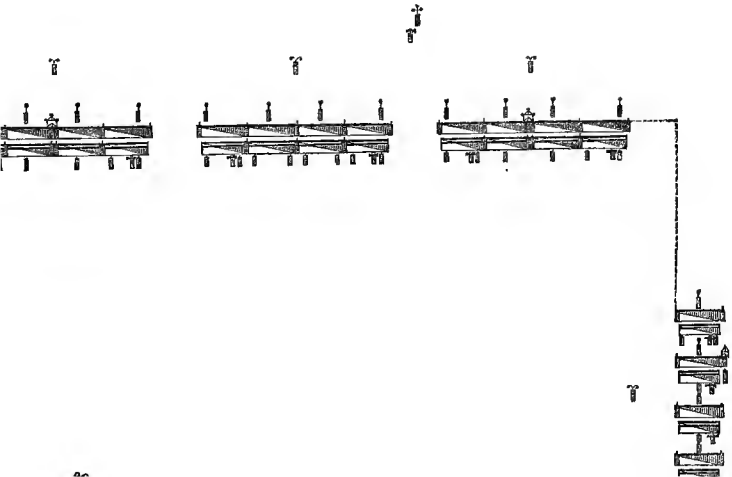


Order of review and of battle





ment of six squadrons.



that all the regiments of light cavalry of the line, and 4 of the heavy cavalry, are 8-squadron regiments, so that the formations, &c., hereafter given for 8-squadron regiments may be regarded as the *rule* in the Russian service.

THE FORMATIONS OF A REGIMENT IN LINE.

A cavalry regiment may be deployed for *inspection and review*, or for *combat*. In 6-squadron regiments, these formations are the same; in the others they are different. The formation for inspection and review is called the *order of review;* that for combat, is called the *order of battle.*

THE ORDER OF REVIEW.

This is the same for all regiments; in it all the squadrons are formed in one line, arranged in the order of their numbers, from right to left; the interval between the squadrons is equal to the front of a platoon.

Fig. 49 shows this formation, and the positions of the different officers.

The colonel is 6 times platoon distance in front of the centre; each division commander at double platoon distance in front of the centre of his division; the squadron officers as prescribed in the school of the squadron.

If there is not an officer, as file-closer, behind each squadron or division, there must, at least, be one for the regiment, who is posted at platoon distance in rear of the centre of the line of non-commissioned file-closers; if there are more than one officer, as file-closers, but not as many as the number of divisions, they are posted in preference behind the flank divisions.

The trumpeters are either united, at half platoon distance on the right of the 1st squadron, or are with their respective squadrons.

THE ORDER OF BATTLE.

The formation of a regiment in order of battle depends upon the number of squadrons of which it is composed.

(Fig. 49.) For a regiment of 6 squadrons, it is, as already stated, the same as the order of review.

(Fig. 50.) For a regiment of 8 squadrons, it is as follows: the first 6 squadrons are deployed as in the order of review, and form the line of battle; the 7th squadron is formed in column by platoons, left in front, at squadron distance behind the right flank of the line of battle, its line of left guides being at platoon dis-

tance to the right of the right flank of the 1st squadron; the 8th squadron is formed in column by platoons, right in front, in a similar position behind the left flank of the line of battle.

(Fig. 51.) For regiments of 10 squadrons, (dragoons,) with all their squadrons present, the order of battle is as follows: in two lines; one line of the first four squadrons, the other line of the next four, either line may be in front; the front line is called the line of battle, and is deployed; the rear line is formed in columns of attack, these columns being opposite the intervals *in* the divisions of the line of battle.

The lancer squadrons (9th and 10th) are formed in columns by platoons in rear of the flanks of the line of battle, as described for the 7th and 8th squadrons of 8-squadron regiments.

The line of battle and the second line are 300 yards apart.

The figures explain sufficiently the positions of the officers in the order of battle.

Commands are given and repeated on the same principles as in the United States tactics; when the colonel gives the command, *march*, he raises his sabre vertically, to the full length of his arm; he does the same thing upon giving the command, *halt*.

In the order of battle, the chief trumpeter accompanies the colonel; there is one trumpeter with each commander of division; one with each platoon of the flanker, or lancer, squadrons; the rest are in the rank of file-closers with their respective squadrons.

In dragoon regiments, the drummers are united in rear of the second line.

STANDARDS AND THEIR ESCORT.

Every division has a standard, which is posted with the 1st squadron of the division, and generally follows the movements of the 3d platoon.

The escort of the standards is always composed of one of the platoons of the 1st squadron of the regiment; to bring the standards to the regiment, the chief trumpeter and 3 trumpeters accompany the escort; to carry them back to the colonel's quarters, all the trumpeters of the regiment are detailed.

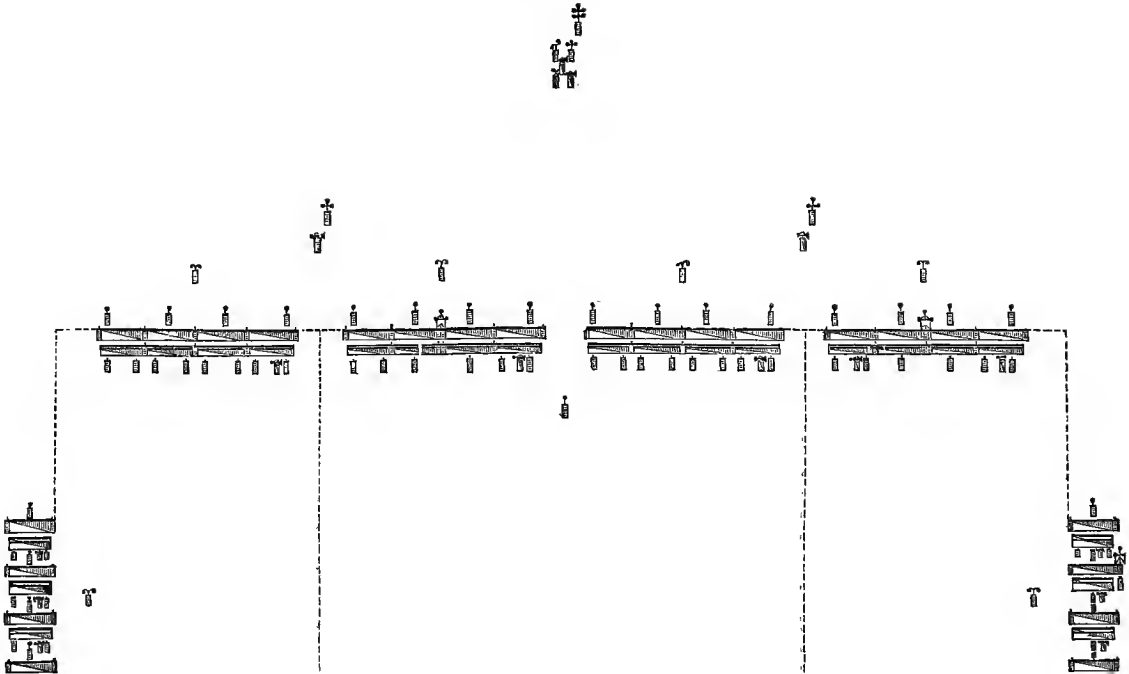
Fig. 52.

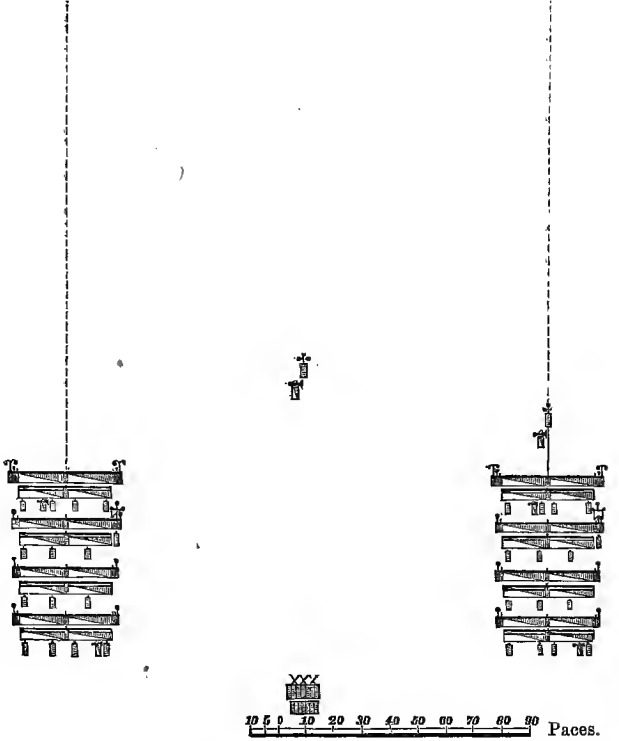
Fig. 52 shows the order of march of the standards and their escort.

In bringing the standards to the regiment, when the escort reaches the nearest flank of the regiment, it at once moves to its post in line, at a trot, by the rear of the regiment.

For the departure of the standards, the chiefs of the 3d pla-

Fig. 51.





Order of battle of a regiment of 10 squadrons.

toons of the standard-squadrons conduct them to the front of the 1st platoon of the 1st squadron of the regiment, which in this case forms the escort; having turned over the standards to the adjutant, the chiefs of the 3d platoons at once return to their platoons.

It is required that the commandants of the 3d platoons of standard-squadrons shall be officers, even if all the other platoons of the squadron are commanded by sergeants.

ALIGNMENTS.

There are no general guides. One squadron is designated as the *squadron of direction;* its principal guides (see school of the squadron) are posted by the adjutant, who then aligns the principal guides of the other squadrons, in succession, on them.

When the regiment is deployed, it may be aligned by ordering the commandants of platoons forward on the line, instead of sending out the principal guides. The principal guides or commandants of platoons move to their posts on the new line at a full gallop.

TO CHANGE FROM THE ORDER OF REVIEW TO THE ORDER OF BATTLE.

In an 8-squadron regiment, the first 6 squadrons stand fast, the commanders of the 7th and 8th wheel their squadrons by platoons to the right, and conduct them, by the shortest line, to their new positions.

In a 10-squadron regiment the first two divisions stand fast; the 3d and 4th form columns of attack, and then move by the shortest line to their new positions; the 9th and 10th squadrons act as prescribed for the 7th and 8th of an 8-squadron regiment.

In columns with distance, the colonel and the commanders of divisions and squadrons are all on the directing flank, opposite the centres of their respective commands, and at distances from the line of guides equal to their respective distances in front of the line when it is deployed; so that if the column wheels into line they are all in their proper places; the adjutant habitually follows the colonel.

Among other formations in column, the regiment is sometimes formed into several parallel columns of divisions, or squadrons by platoons.

CLOSE COLUMNS.

In these, the distance between subdivisions is 15 paces,

measured from the fore-feet of the front-rank horses of one subdivision to the same of the next subdivision.

Fig. 53 shows the manner of forming close column by squadron, from a halt, and the posts of the officers. If there are in front of any of the platoons officers other than their commandants, they retain their usual places.

If the close column is by half squadron, the commandants of divisions and squadrons are posted on the directing flanks of their leading subdivisions, and the commandants of half squadrons on the directing flanks of their respective commands.

In forming close column from a halt, the movement is by threes, in each rank. In regiments of 10 squadrons, to form close column from order of battle, the divisions of the 2d line first deploy.

Fig. 54 will show the general manner in which a regiment formed in columns of attack changes front and deploys.

Fig. 54.

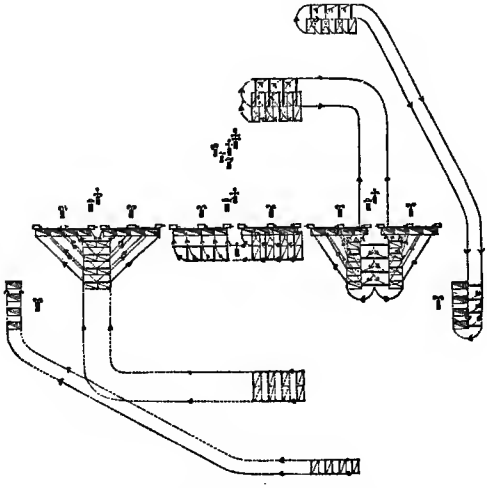
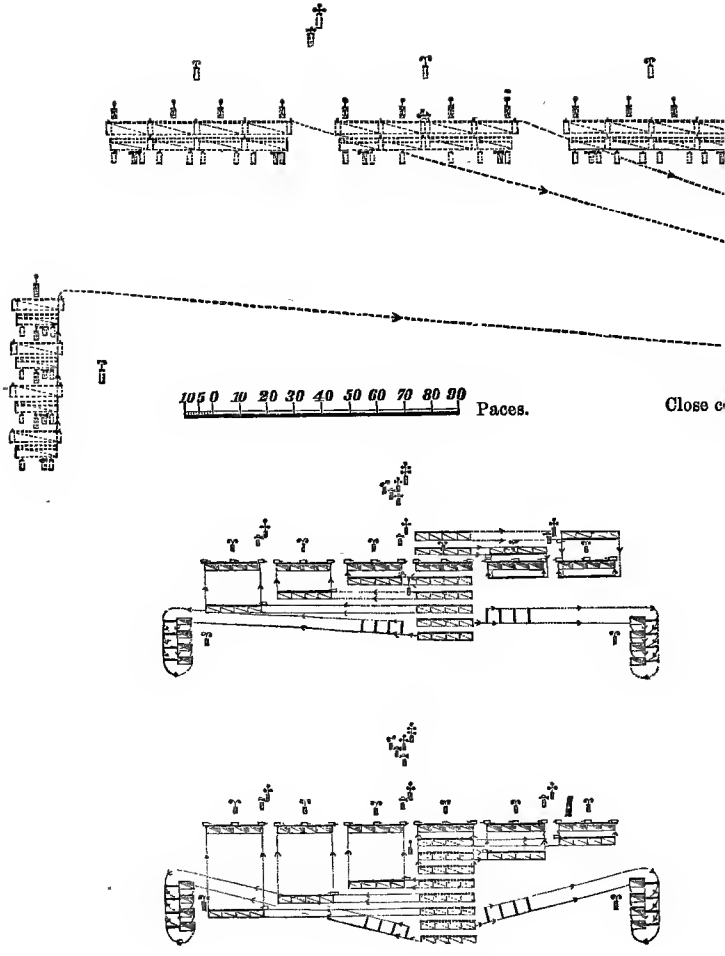


Fig. 55 will sufficiently explain the general methods of deploying close columns.

The changes of front are executed either with the squadrons deployed, or formed in columns of attack.

The regiment is exercised in advancing and retreating by alternate half squadrons, squadrons, or divisions.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Close c

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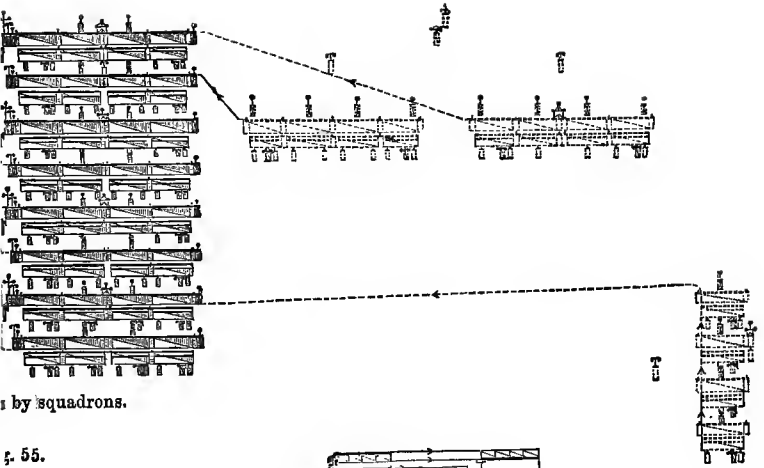
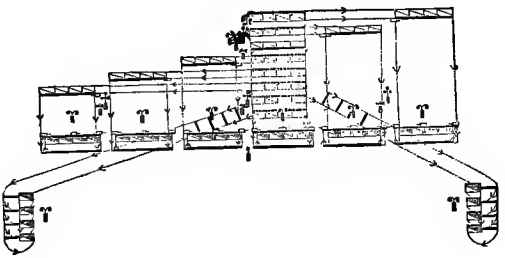
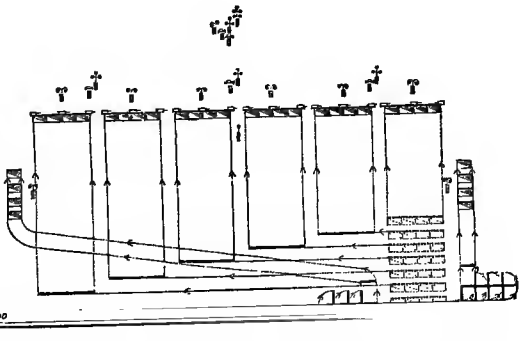


by squadrons.

g. 55.





close columns.

The formations in echelon are by half squadrons, squadrons, or divisions.

THE CHARGE.

The charge in line, in close order, is executed according to the principles laid down in the school of the squadron.

In certain cases, regiments charge in close column; this is executed, in preference, by the cuirassiers, and always at the *trot out;* only the front rank of the leading subdivision charge lances, or sabres.

The charge in open order is also executed according to the principles laid down in the school of the squadron; one half squadron of every squadron charges, while the others remain in reserve. One division commander is detailed to command the half squadrons which charge, another to direct the reserve. If the regiment is formed in columns of attack, when the charge in open order is to be made, the squadrons first form columns by half squadron, of which the leading half squadrons charge, while those in rear are held in reserve, and at once take the proper intervals of 5 platoon fronts.

The flanker squadrons of 8-squadron regiments, and the lancer squadrons and second line of dragoons, follow the movements of the line of battle; marching at the same gait as the latter until it charges, when they move on at the trot out; closing up on the line of battle to the prescribed distance, when it halts. If the colonel considers it necessary to form the flanker or lancer squadrons in echelon, he orders them to *form squadron,* after which they continue the movement as just explained.

If the signal *reserve* is sounded, these flanker or lancer squadrons, instead of halting, move on at a charge in pursuit of the beaten enemy, returning to their posts in rear of the flanks when the recall is sounded.

REVIEWS.

Cavalry passes in review: in *column with distance,* by platoons, half squadrons, or squadrons; in *column with half distance,* by half squadrons, squadrons, or divisions; in *close column,* by half squadrons, or squadrons. The adjutant is at the head of the column; one pace behind the adjutant is the band of trumpeters, in two ranks, with the chief trumpeter on the right of the front rank; the colonel, 6 paces in rear of the trumpeters; the commander of the 1st division, 3 paces in rear of the colonel; the commander of the leading squadron, 3 paces in rear of the division commander; then the leading subdivision of the column.

The Russians call a division of 2 brigades divis*ia*; a division of 2 squadrons is divis*ion*. Confusion is thus avoided.

EVOLUTIONS OF THE LINE.

The volume on this subject is divided into two parts: 1. Evolutions of the line proper; 2. Orders of battle, general columns, and the application of the evolutions of the line to these.

EVOLUTIONS OF THE LINE PROPER.

This subject comprehends the movements of several regiments, whether in line or in columns.

The first great requisites for a successful cavalry general and instructor are, perfect coolness and presence of mind.

The rules for *giving* and *repeating commands*, as given in the school of the regiment, apply here, with a few additions.

The preparatory commands are given by the general commanding, and are repeated by the other generals and the colonels; they are at once followed by the designation of the gait and the command, *march*. Down to the brigadier-generals, inclusive, the general commands alone are given; the colonels give the special commands prescribed in the school of the regiment.

In all cases the generals of brigade repeat the preparatory commands of the generals of their divisions.

If all the regiments of a brigade are to execute the same movement, the general of brigade gives the preparatory commands for all of them.

If different regiments of a brigade are to execute different movements, the general of brigade gives the preparatory command for the movement of the 1st regiment only; the colonels of the other regiments giving the requisite commands.

Whenever the preparatory commands are to be repeated by all the generals and colonels, the general commanding raises his sabre; this signal is repeated simultaneously by all the generals and colonels; the commanders of divisions (2 squadrons) and squadrons at once give the command, *march*.

When a movement is to be executed by all the troops, the general preparatory commands are repeated by all the subordinate commanders; but when only a portion of the troops are to execute the movement, the preparatory commands will be repeated only by the commanders of that portion.

Colonels will always preface the command, *regiment*, by the number of their regiments in the division, or brigade, (if there is only a brigade present.)

Generals of division will likewise preface the command, *divi-*

sion, by the number of their respective divisions; but generals of brigade simply give the command, *brigade*, not prefacing any number.

If the troops are formed in one general column, or in a line of regimental columns, the commands to *draw* and *return sabres* are given by the generals of division, and repeated by the generals of brigade and the colonels; the troops execute the order at the command of the latter. If the regiments are deployed, or each formed into several columns in line, these commands are repeated by all commanders, down to those of squadrons inclusive, and executed at the command of the latter. When the number of troops is so great that the voice of the general commanding cannot be heard by all, he sends his orders by aides-de-camp. In such cases the distant parts should conform to the movements of those nearest the general commanding, that the movements may be as simultaneous as possible. The general will assure himself that the aides fully comprehend the order, so as to prevent errors and misunderstandings; the aides should carry the order with the utmost rapidity, and deliver it clearly and slowly, but they have no authority to interfere with the execution. If they see that the order is not properly carried out, they should remind the officer to whom it was delivered and return to the general as soon as it is executed; they report the fulfilment of the order, or the reason for its non-fulfilment. Trumpet signals apply only to the first line, and are repeated only by the trumpeters of that line. All commands to the second and other lines are given by the voice. The rules for the guidance of the principal guides, as given in the school of the regiment, apply to the case of evolutions of the line.

POSTS OF GENERALS, ETC.

Figs. 56 to 61 give the positions of the generals of division, brigade, &c. When the regiments are deployed, either in the order of review or of battle, the generals of divisions are at the distance of ten platoon fronts in advance of the centres of their respective divisions; the generals of brigade eight platoon fronts in advance of the centres of their brigades.

In general close column (fig. 59) the general of division is on the directing flank of the leading subdivision of his command, at the distance of three platoon fronts from the guide; each general of brigade on the line of his leading subdivision, at the distance of two platoon fronts from the guide. When the regiments are formed in line of close columns of regiments, at deploying intervals, the posts of the generals are as when

the regiments are deployed. When the line of close column of regiments is with closed intervals, the generals of division are at the distance of six platoons; generals of brigade, four; colonels, two in advance; the latter are on the prolongation of the lines of guides of their regiments. The general commanding may move wherever his presence is most necessary; but the subordinate commanders will in no case leave the places assigned to them, but will correct any faults, either by orders to the nearest subordinate commanders, or by means of their aides-de-camp. Each general has a trumpeter with him; the other trumpeters take post as prescribed in the school of the regiment.

OF DEPLOYED LINES.

Regiments and brigades are posted, in each division, from right to left, according to seniority. In the order of review and the order of battle they are each formed as prescribed in the school of the regiment. Corps, divisions, and brigades are habitually formed in order of battle, unless special orders are given to form them in the order of review.

Fig. 60 shows the formation of a brigade of eight-squadron regiments in the order of battle.

Fig. 61 shows the formation of a brigade of ten-squadron regiments in the order of battle.

Both in the order of battle and that of review the interval between regiments and brigades is two platoon fronts; in the first case; for eight and ten squadron regiments, this interval is measured between the flanker, or lancer, squadrons. In the order of battle of commands composed of ten-squadron regiments the front line may be composed of the corresponding wings of all the regiments, or one half of it may be composed of the right wings of one-half the regiments, and the other half of it of the left wings of the remaining regiments.

In the order of battle of eight and ten squadron regiments the flanker, or lancer, squadrons are regarded as belonging to the first line, and not as constituting a separate line. When the general line is to be aligned to the front, care must be taken that the new direction does not cross the old.

In all alignments the flanker, or lancer, squadrons, formed in columns by platoons, align themselves on the flank squadrons of the line of battle, and always have the guide on the inner flank.

The march to the front, the oblique march, wheels and abouts by subdivisions, and halts, are executed by the commands and according to the principles laid down in the school of the regiment, substituting in the preparatory commands, when necessary,

Fig. 56.—Division de

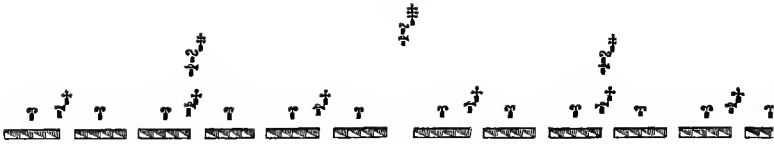


Fig. 57.—

Fig. 59.
Division in general close column.

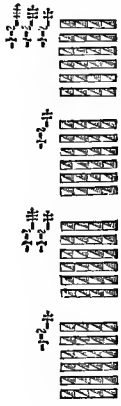
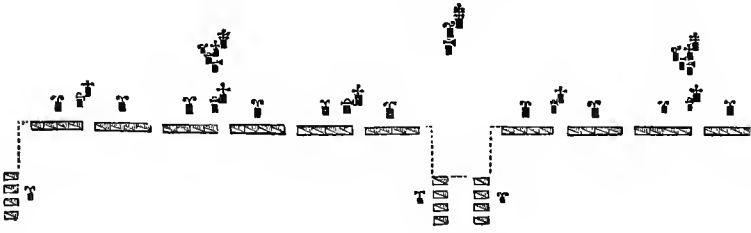
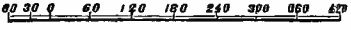


Fig. 5

Fig. 60.—Brigade of 8-squadron regiments in order of battle.

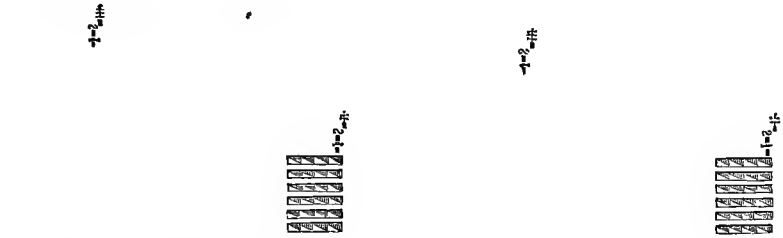




Paces.

in the order of review.

on in line of columns, with full intervals.



ne of column, with closed intervals.

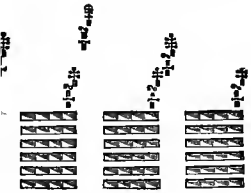
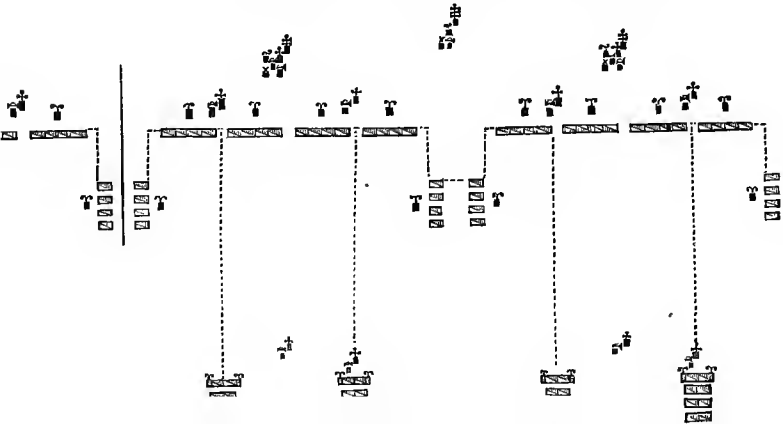


Fig. 61.—Brigade of 10-squadron regiments in order of battle.



the word *division*, or *brigade*, for *regiment*. The charge is executed according to the principles laid down in the school of the regiment.

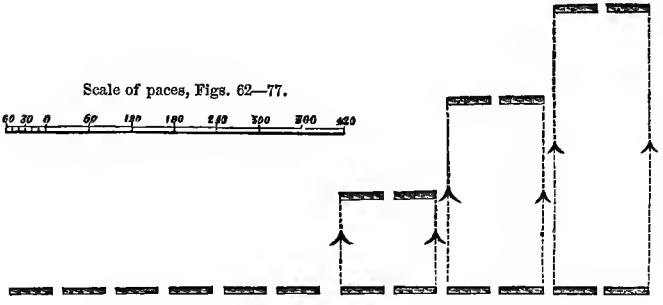
The same holds good with regard to the passage of obstacles; but if partial obstacles exist along the front of a whole regiment, each squadron breaks into column by the appropriate subdivision, and forms squadron as soon as the obstacle is passed. If all the ground in front of a regiment is impassable, it forms into close column, by squadrons, in rear of one of the regiments on its flanks, and does not re-enter the line until the next halt, unless orders to the contrary are given. If the obstacle is in front of the regiment of direction, another regiment is designated in its place.

ECHELONS.

The formation of and movements by echelons are executed as in the school of the regiment, with the following modifications:

(Fig. 62.) In a line of considerable extent, one part may

Fig. 62.



Echelons by divisions, one regiment standing fast.

break by echelons while the other part remains in line; in this case the movement begins at one of the flanks, and is arrested by the command, *halt*.

Echelons may be formed on an interior part of the line, in which case that part is designated as that of direction; the following movements may thus be executed: (1,) one flank of the line may break by echelons to the front, and the other to the rear; (2,) both flanks may break to the front, or both to the rear; (3,) the subdivision of direction may commence the movement, by breaking to the front or rear.

In the first two cases the subdivision of direction stands fast,

in the last case it commences the movement; all these movements are executed as prescribed in the school of the regiment. During movements by echelons, the 2d line of ten-squadron regiments conforms to what will hereafter be laid down for the *second line.* Line is formed from echelons according to the principles of the school of the regiment.

THE ADVANCE AND RETREAT BY ALTERNATE HALF SQUADRONS, SQUADRONS, AND DIVISIONS.

This is executed as prescribed in the school of the regiment, with the following modifications: if the movement is ordered to be commenced by *the right*, and by divisions, (of two squadrons,) then, in six and eight squadron regiments, the 1st and 3d divisions of the 1st regiment, and 2d division of the 2d regiment of each brigade, commence the movement; if it is directed to be commenced by *the left*, the 2d division of the 1st regiment, and the 1st and 3d divisions of the 2d regiment, commence the movement. If the order to advance by alternate subdivisions is given while the line is on the march, the subdivisions which are to commence the movement continue marching at the original gait, but the others halt; if, under the same circumstances, a retreat is to be executed, the subdivisions which are to commence the movement at once wheel about at the original gait, the others halt.

TO CHANGE FRONT.

In changes of front the general rule is: the regiment of direction changes front by the rules laid down in the school of the regiment; the others form columns of attack, which move by the shortest lines upon the positions marked by their principal guides.

If, in a single brigade, the preparatory command is prefaced by the words, "*by squadrons,*" each regiment executes the movement according to the school of the regiment, neither forming columns of attack.

If the flank squadron of any brigade or division is the squadron of direction, the contiguous regiment of the next brigade or division may change front according to the school of the regiment. In a line of great extent, all the regiments may be first formed into columns of attack, and the change of front then executed.

OF THE FORMATION OF COLUMNS.

General rules.—Columns with full distance are formed according to the school of the regiment. Columns with less than full

distance are formed like close columns. The principles of the formation of close columns by squadrons and by half squadrons being the same, the rules for those by squadrons are alone given.

Columns having the senior regiment in front are called *right columns*, those having the junior regiment in front are called *left columns*, whether each regiment be right or left in front; in all cases right general columns have the guide left, and the reverse.

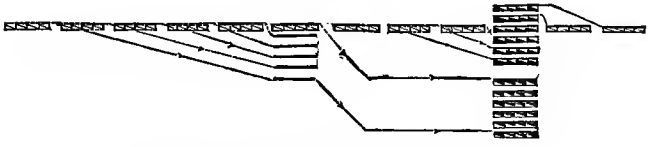
The distance between divisions, brigades, and regiments, in close column, is twice platoon distance, measured as between the subdivisions of a regimental close column. General close columns may be formed either from a deployed line or from a line of close regimental columns.

FORMATION OF GENERAL CLOSE COLUMNS FROM A DEPLOYED LINE.

(Figs. 63 and 64.) One squadron is designated as that of direction; the regiment to which that squadron belongs forms close column on it, according to the school of the regiment; the other regiments each form close column on the flank squadron nearest the regiment of direction, and then move by the oblique march to their respective positions in the general column.

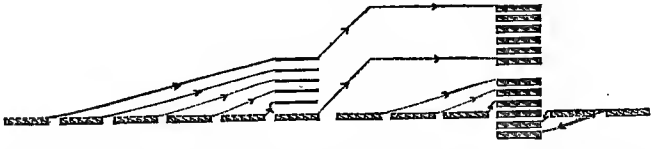
In all the movements of the regimental columns to form the general column, especially when obliquing, every squadron must

Fig. 63.



General right column on 3d squadron, 1st regiment.

Fig. 64.



be exactly parallel to its original position in line; the lines of guides on both flanks must be parallel to each other, and perpendicular to the squadron at the head of the column; and, finally, the several files must be parallel to each other.

FORMATION OF GENERAL CLOSE COLUMNS FROM A LINE OF REGIMENTAL COLUMNS.

Regimental columns in line—*i.e.* columns having the heads of all the regiments on the same line—are formed with full or closed intervals; this formation is called a line of columns with full or closed intervals.

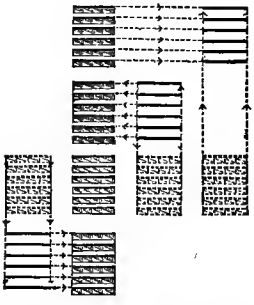
Full intervals are such as to permit all the regiments to deploy into order of battle on the same squadron of every regiment; closed intervals are: between 6-squadron regiments 2 platoon fronts; between 8-squadron regiments 4 platoon fronts; between 10-squadron regiments 6 platoon fronts.

General close column may be formed from a line of columns, either with full or closed intervals.

The first case has already been explained, when giving the manner of forming general column from a deployed line.

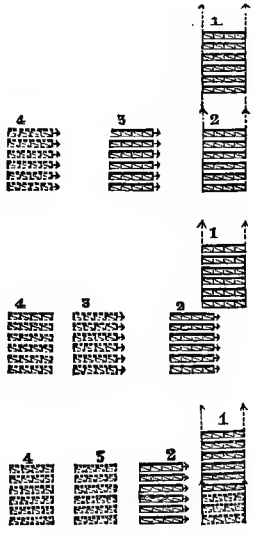
Fig. 65 gives an example of the latter case; one regiment

Fig. 65.



Formation of a right general column, on 3d regiment, from a line of columns with closed intervals.

Fig. 66.



being designated as that of direction, those which are to be in front of it in the column march straight to the front, until, arriving abreast of their places in column, when they move

straight to their places; those that are to be in rear of the directing regiment gain their positions by first marching to the rear.

If the order to form general column is given when the line is in march, the directing regiment halts; the others acting as just described.

Fig. 66 shows the manner of forming the general column on one of the flanks when the march is to be continued after the formation.

The 1st regiment marches straight forward; the 2d moves to the right, by threes in each rank, as soon as the last squadron of the 1st regiment is abreast of the 3d squadron of the 2d regiment, and moves to the left, by threes, when its line of left guides is on the prolongation of that of the 1st regiment; the 3d and 4th regiments move to the right, in turn, as soon as the regiments next on their right have gained an interval equal to the depth of a regimental close column—*i.e.* in a 6-squadron regiment 5 platoon fronts; in an 8-squadron regiment 7 platoon fronts; in a 10-squadron regiment 9 platoon fronts. At the close of the movement, the distances between the regiments in the general column will be four platoon fronts; the colonels of the 2d, 3d, and 4th regiments will, therefore, close up on the head of the column, by doubling the gait.

If the column is thus formed on the march, the 1st regiment continues to move at the original gait; the others halt.

Each brigade may be formed into a separate column, and these brigade columns, afterwards, in one general column.

Fig 67 shows the manner of forming general close column, from a line of regimental columns, by a change of direction to the right or left, executed by each regiment. If the intervals between the regiments in line are less than those already laid down, it will be necessary to increase them for eight or ten squadron regiments before executing the movement. At the close of this formation, the regiments in the general column will have less than their proper distances; these must be taken upon the first movement of the column.

TO FORM LINE OF COLUMNS FROM A DEPLOYED LINE.

To effect this, each regiment forms close column by squadron.

If the same squadron in each regiment is taken as that of direction, the line of columns will be formed with full intervals.

If the line is to be formed with closed intervals, the squadrons of direction are so chosen, in the different regiments, that no squadron may be obliged to pass twice over the same ground.

A line of columns of attack is formed as prescribed in the school of the regiment.

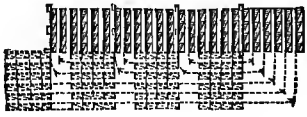
OF MOVEMENTS IN COLUMN.

Movements in general column.—These are made in every direction, according to the principles of the school of the regiment.

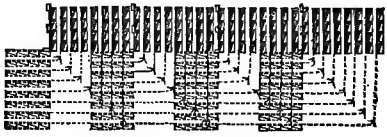
In changing the direction of a close column, by the head of column, the following is to be observed: each regiment will

Fig. 67.

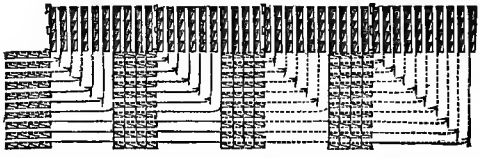
6-squadron regiments.



8-squadron regiments.



10-squadron regiments.



turn where those in front of it did; the gait of the regiments in rear must be so regulated that no part of the column may be obliged to halt before the wheel is made, and that, on the completion of the wheel, every regiment may have its proper distance.

Fig. 68 gives an example of the method of changing the direction of a close column from a halt.

In close column, distances are taken in accordance with the principles of the school of the regiment; *e.g.*, in a close column, consisting of a brigade of 2 six-squadron regiments, to take distance, by head of column, on the 2d squadron of 2d regiment; the 2d regiment takes distance on its 2d squadron, as laid down in the school of the regiment; the colonel of the 1st regiment marches it forward, and when his 6th squadron is 6 times platoon distance in advance of the point where the 1st squadron of 2d regiment halted, he halts the 6th squadron; the others halting in succession as they gain their distances.

Columns with distance are closed according to the school of the regiment.

Movements of a line of columns.—These are effected according to the same principles, and by the same commands, as for a deployed line.

Fig. 68.

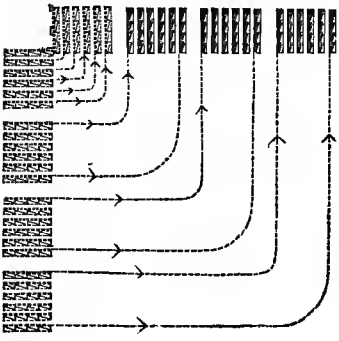
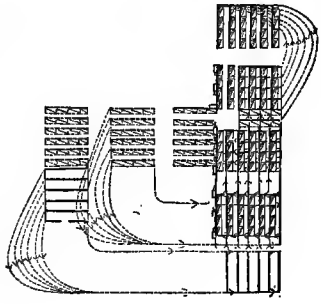


Fig. 69.



The intervals of a line of columns are diminished or extended by marching each column along the line; the principal guides of the leading squadron of each column precede it, and mark its new position.

Fig. 69 presents an example of the manner of changing the front of a line of columns with closed intervals.

TO FORM LINE FROM COLUMN.

General rules.—To form line from a right general column, with full distance, each subdivision wheels to the left; from a left column, they wheel to the right; in both cases the line is formed on the side of the guides, and in accordance with the principles of the school of the regiment.

To form line forward from a similar column, it is first closed, and the line then formed as usual from closed columns.

A general close column may be formed either into *line of columns*, or into a *deployed line.*

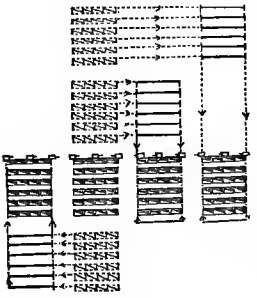
The formation into *line of columns* may be effected either to the front, to the right, or to the left. That to the front is effected by conducting the heads of the regiments on the new line; that to the left, (Fig. 72,) from a right column, by a change of direction to the left in each regiment; that to the right, from

a left column, by a change of direction to the right in each regiment.

To form a general *close column* into a *deployed line*, to either flank, the column first changes direction, and then forms line to the front. A line of close columns may also be deployed into line to the front, or either flank; in the last case, the preceding paragraph must be conformed to.

In *forming line of columns* from general close column, the regiment of direction may either halt or move forward. In both cases the formation is executed according to the rules given, in the school of the regiment, for deploying a close column: *i.e.* all the movements and rules laid down for the squadrons and squadron commanders are here executed by the regimental columns and the colonels.

Fig. 70.



The line on which the heads of columns form is marked by the principal guides of the leading squadron of each regiment.

The line of columns, formed from general column, should be with closed intervals.

Fig. 70 shows the manner of forming line of columns to the front, on the 3d regiment, which stands fast.

Fig. 71 shows the manner of forming line of columns to the front, on the 3d regiment, which advances.

Fig. 72 shows the manner of forming line of columns to the left, from general column.

To form a *deployed line* from general close column, one squadrón is designated as that of direction. In forming line on the leading squadron, it may either stand fast or advance; if any other squadron is that of direction, it will always be thrown forward. The column may be deployed either from a halt or on the march; in the latter case, the squadron of direction halts at the command of execution.

Fig. 73 gives an example of the manner of deploying a general column of 2 regiments on the 6th squadron of the 1st regiment.

Fig. 74 gives an example of the deployment of the same column on the 2d squadron of the 2d regiment.

TO DEPLOY INTO LINE FROM A LINE OF COLUMNS.

Fig. 75 gives an example of the deployment of a line of 2

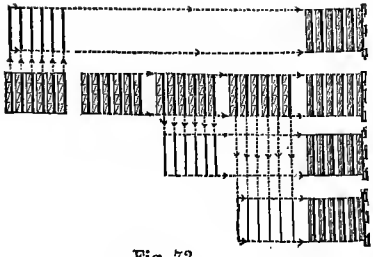


Fig. 71.

Fig. 72.

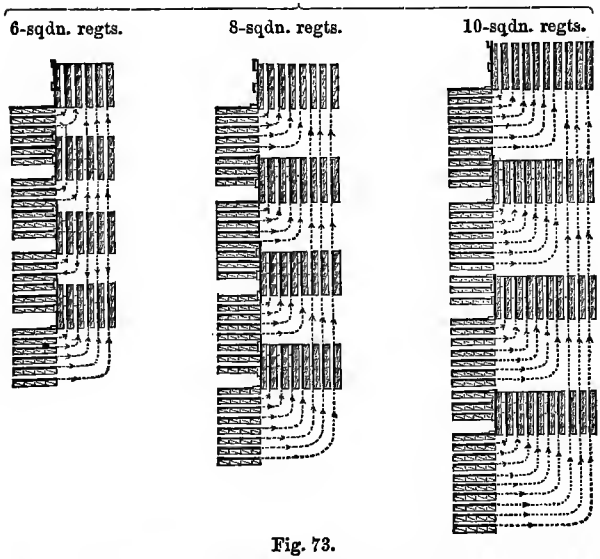


Fig. 73.

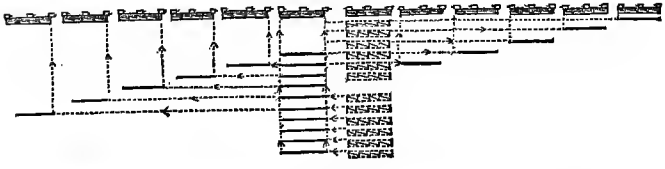
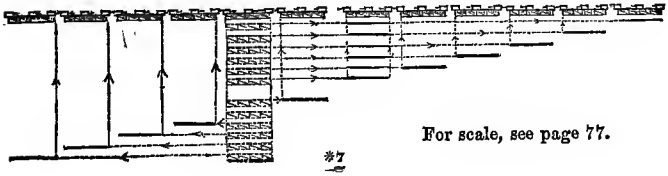


Fig. 74.



For scale, see page 77.

Fig. 75.

regimental columns; this will explain the general principle of all such deployments, in which the squadrons of direction always advance upon the new line.

A *line of columns* of *attack* is deployed as prescribed in the school of the regiment.

OF THE FORMATION IN TWO LINES.

The first line is usually deployed; the second in columns of attack; the first line, however, is sometimes also in columns of attack.

The distance between the lines is, usually, about 300 yards.

The second line is formed in columns of attack, because these columns are deployed more rapidly than any other; because in this order the second line can advance through the first without obstacle, and the first can in like manner retreat through the second.

The columns of attack of the second line are placed behind the corresponding divisions (of 2 squadrons) of the first line; the centres of the columns opposite the middles of the intervals *in* the divisions of the first line.

A general column is deployed *into two lines*, as follows: the portions designated for the 1st line remain in the column until ordered to deploy, either from a halt or in march, by the general commanding, whose order is repeated by the commander of the 1st line; the portions designated for the 2d line are conducted to the proper distance to the rear by the commander of that line, and, having gained this distance, at once deploy, and form columns of attack; if the deployment is made on the march, the 2d line reduces the gait, halting if the original gait was a walk, and then acts as described above; in any case, when the 2d line has formed its columns of attack, it preserves its proper distance from the 1st line by doubling or reducing the gait as may be necessary.

ASSIGNMENT AND POSITION OF COMMANDERS.

Each line should have a special commander. In a division formed in two lines by brigade, the commanders of the lines are the generals of the brigades of which they are respectively formed; if a brigade is formed in two lines, the colonels of the

regiments are the commanders of the lines; if each line is composed of two regiments belonging to different brigades, then the general of division assigns a general of brigade to command each line. In every case the position of the commander of each line is in conformity with what has heretofore been prescribed; *e.g.* if a line consists of two regiments, whether of the same brigade or not, the commander of that line posts himself as prescribed for a general of brigade.

The general of division is always with the 1st line.

MOVEMENTS OF THE LINES.

All movements of the 1st line are made by signals, or by the order of the general commanding, repeated by the commander of the 1st line; the movements of the 2d line are made by orders of the general commanding, transmitted by an aide-de-camp, and upon the immediate order of the commander of the 2d line. Trumpet signals refer only to the 1st line, and are not repeated by the trumpeters of the 2d line. The 2d line conforms to all the general movements of the 1st, and preserves, with reference to it, the distance at which it was originally formed. If the 1st line charges, the 2d moves at the trot out, and resumes its proper distance when the 1st halts, or passes to a slower gait from the charge.

If the 1st line moves to either flank, advances, or retreats, the 2d line, formed in columns of attack, executes the corresponding movements by platoons. If the 1st line advances or retreats by alternate subdivisions, the 2d line, in conforming to the movement, moves in one mass; *e.g.*, if the 1st line advances by alternate squadrons, the odd squadrons commencing the movement, the whole of the 2d line advances when the even squadrons of the 1st line start, and halts when these squadrons arrive abreast of the halted odd squadrons, and again advances when the odd squadrons start the second time,—for the distance between the lines is measured between the nearest parts of the two; if the 1st line retreats by alternate squadrons, commencing with the odd squadrons, the 2d line stands fast until the even squadrons start, and moves with them.

If the 1st line advances or retreats by echelons of divisions, the columns of attack of the 2d line move at the same time as their corresponding divisions of the 1st line; if but a part of the 1st line breaks by echelons, the other part remaining in line, the 2d line conforms to the movement.

If the 1st line breaks by echelons on both flanks, or by the centre, the 2d line moves in line with the rear echelons. If the

1st line breaks by echelons of squadrons, the divisions of the 2d line conform to the movements of that squadron of their corresponding divisions of the 1st line which is nearest them, and farthest from the enemy.

CHANGES OF FRONT.

The 1st line changes front as heretofore explained.

When the front is changed 45°, the division of direction in the

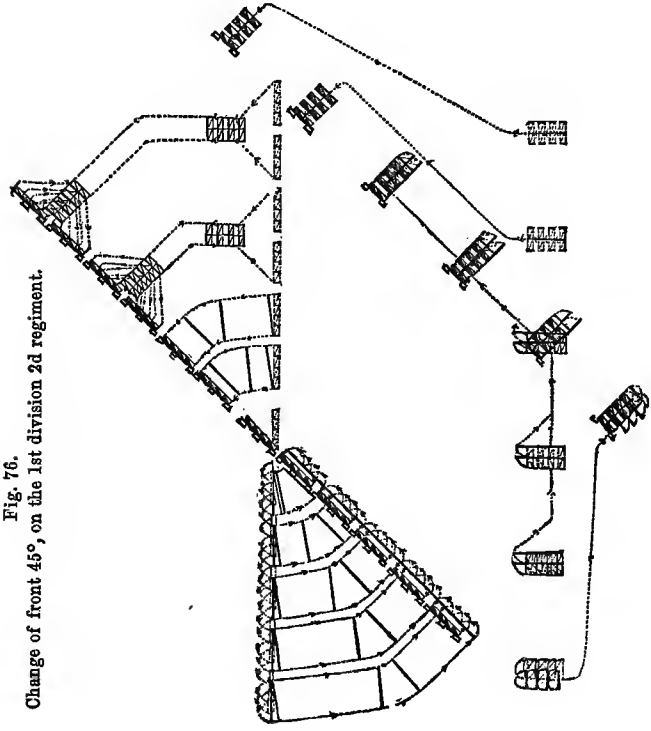


Fig. 76.
Change of front 45°, on the 1st division 2d regiment.

2d line is the one corresponding to that of the 1st line. The directing division of the 2d line, and all the others in rear of that flank of the 1st line which forms forward, also form for-

ward; the division next to that of direction, on the side in rear of that flank of the 1st line which forms to the rear, will have its new position on the line of original formation of the 2d line, and at the point originally occupied by the next division on the other side of that of direction; all the remaining divisions form to the rear.

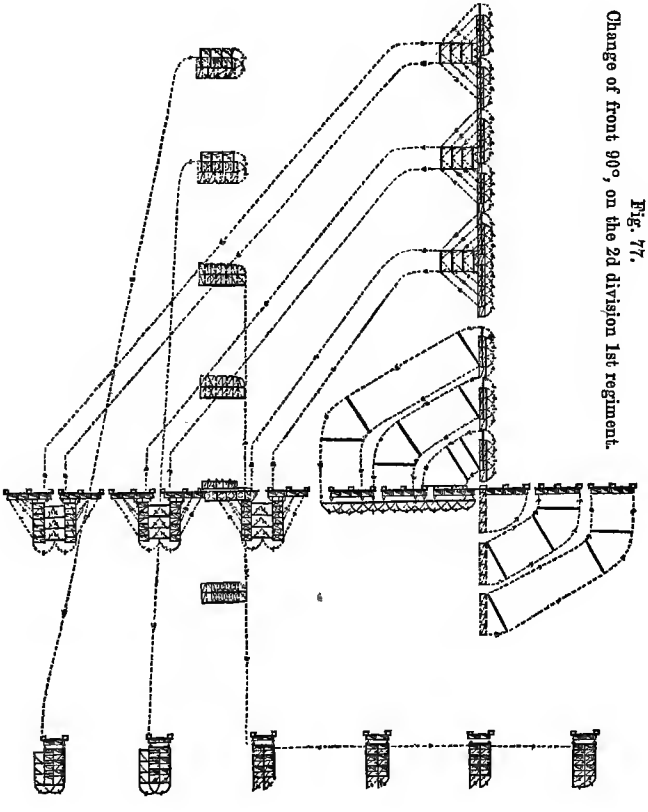


Fig. 77.
Change of front 90°, on the 2d division 1st regiment.

Fig. 76 shows the manner of changing front forward 45°, on the first division of the second regiment of the 1st line, and explains what has just been said, *i.e.* the first division of the

second regiment of the 2d line is that of direction: it and all the divisions of the 1st regiment form forward, the second division of the second regiment occupies the original position of the third division of the first regiment, and the third division of the second regiment forms to the rear.

Fig. 77 shows the manner of changing front 90°. This example will explain the general rule for changing front 90°, which is as follows: in the second line, the division of direction is the one corresponding to that of the 1st line: it, and all the others behind that flank of the 1st line which forms forward, form forward; the two next divisions in rear of the other flank of the 1st line also form forward; the remaining divisions of the 2d line form to the rear.

PASSAGE OF THE LINE.

This may be executed in three ways; (*a*) by the 2d line advancing through the 1st; (*b*) by the 1st line retreating through the 2d; (*c*) by the simultaneous movement of both lines in opposite directions, *i.e.* the 1st line retreating, the 2d advancing.

When the general commanding intends the 2d line to advance through the 1st, he sends orders to the commander of the 2d line to advance; if he intends the 1st line to retreat through the 2d, he informs the commander of the latter of his intention, and orders the 1st line to retreat.

In the passage of the line, both may be formed in columns of attack, or one in this order and the other deployed.

It is a general rule that any party of troops meeting, or passing, another party, leaves the latter on its left; therefore, if the 2d line, formed in columns of attack, is ordered to pass through the 1st line, formed in like manner, the columns of the 2d line pass to the right of the corresponding columns of the 1st line, as shown in figure 79.

If, under similar circumstances, the 1st line retreats through the 2d, the same principle is conformed to.

(Fig. 78.) If the 2d line, formed in columns of attack, is ordered to pass through the 1st, which is deployed, then the columns pass through the intervals in the corresponding divisions of the 1st line.

If both lines, formed in columns of attack, meet on the march, those advancing move straight forward, while those in retreat oblique to the right, out of their way.

(Fig. 78.) When the 2d line, in columns of attack, passes though the 1st, which is deployed, it is necessary to increase the intervals in the centres of the divisions of the 1st line; this

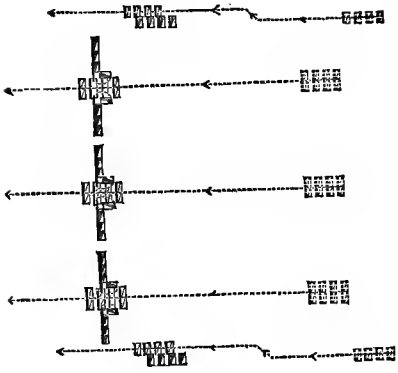


Fig. 78.

Passage of the line.

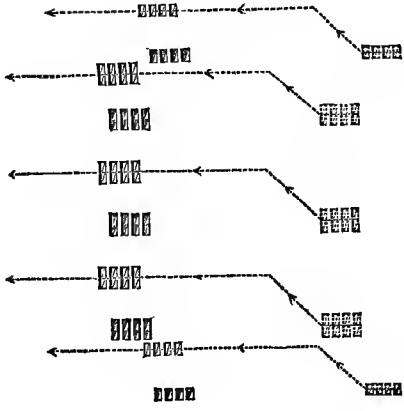


Fig. 79.

(For scale, see p. 77.)

is done by the commands of the division and squadron commanders, without waiting for the orders of the commander of the line; to effect this, the inner flank platoons of each squadron wheel about by threes, then wheel to the right and left, respectively, by platoon, then wheel about by threes, and stand fast until the 2d line has passed, on which the commandants of platoons at once wheel into line.

If the 1st line is in retreat, deployed, or in columns of attack, and the 2d line is ordered to deploy before the 1st has passed it, then, in the first case, (the line retreating deployed,) the odd squadrons of the 1st line break into columns by platoons right in front, the even squadrons left in front, and pass through the intervals on the right of their corresponding squadrons of the 2d line; having passed the line, these columns, by platoons, oblique towards each other, and thus form columns of attack; in the second case, *i.e.* the 1st line retreating in columns of attack, these columns pass through the intervals in the divisions of the second line, which are increased for their passage, as already explained.

When the columns of the 2d line have passed the 1st, they may either be deployed at once or remain in columns.

If the advancing 2d line is halted at less than 300 yards in front of the 1st, the latter does not take its proper distance until the next movement, unless it receives special orders to the contrary.

If the advancing 2d line is not halted at 300 paces from the 1st, but continues to advance, the latter follows the movements of the former at the prescribed distance.

When the 2d line passes the 1st, which is deployed, the latter at once forms into columns of attack, without awaiting the orders of the general commanding in chief.

The tactics give, in detail, the order of march, in review, for a corps of cavalry, with its artillery.

ORDERS OF BATTLE, AND GENERAL COLUMNS.

ORDERS OF BATTLE—GENERAL RULES.

To explain the orders of battle, the case taken is that of a division of cavalry, with its artillery.

By the order of battle of a division of cavalry is meant such a distribution of its parts that the division can act promptly against the enemy.

In the order of battle the regiments are placed in two, three, or more lines. The distribution of the troops in lines, and the

formation of each line, depends upon the purpose of each order of battle.

The 1st line is usually deployed, and is called the line of battle; the troops of the 2d and 3d lines are formed in columns, and, according to the nature of the columns, constitute either *supports* or *reserves: e.g.*, if a line is of columns of attack, the troops thus formed are *supports*, but if the formation is in close columns of regiments by squadrons they constitute *reserves*.

The distance between the lines is usually about 300 yards.

The second line is intended as a support for the first, in case of necessity; it should, therefore, be formed in the order most suitable for this purpose. In conformity with this, it is formed into columns of attack; for these can be deployed more rapidly than any other column, and allow an easy passage of the line.

The purpose of the third line is to support the other two, and also to operate wherever its presence may be necessary. To fulfil this object, it is posted behind the centre of the other lines, and is formed in close columns by squadrons. It is placed behind the centre, because that position is about equally distant from the points where it will most probably be required, *i.e.* the flanks and the centre; it is formed in close columns by squadrons, because in that order the troops are more concentrated than in any other, and can, therefore, be conveniently moved wherever required, and can also, without any inconvenience, be divided and detached, as circumstances may render necessary.

EXPLANATION OF THE ORDERS OF BATTLE.

Divisions may form in *three orders* of *battle* and *one order* of *reserve*.

The first order of battle.—This is employed when the division is isolated, and does not intend engaging in a serious affair with the enemy; therefore, in this case a considerable portion of its force is in reserve. The general formation in this order of battle is: one line of battle, one line of supports, and one line of reserves.

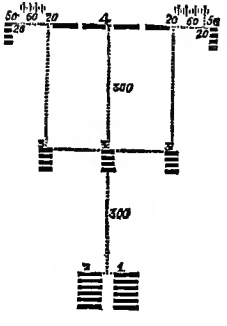
Fig. 84 shows the peculiarity of the formation of a division of ten-squadron regiments.

Figs. 80 to 85 will indicate with sufficient clearness the formation of the different kinds of divisions of Russian cavalry.

It is only necessary to remark that eight pieces constitute a battery; that when half a battery is in reserve it is formed in double column on the centre, by sections; a battery in reserve is formed in double column on the centre, by half battery; when

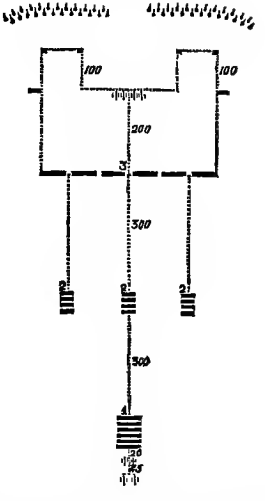
First order of battle.

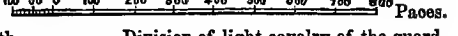
Fig. 80.



Division of cuirassiers of the guard, with one battery.

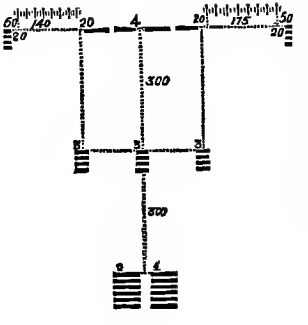
Fig. 81.





Division of light cavalry of the guard.

Fig. 82.



Division of army cuirassiers, with two batteries.

Fig. 83.

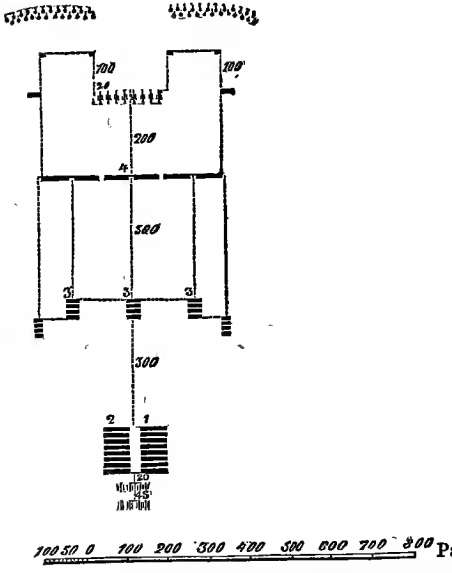


Fig. 84.

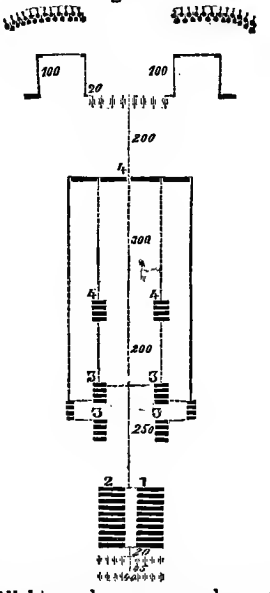


Fig. 85.

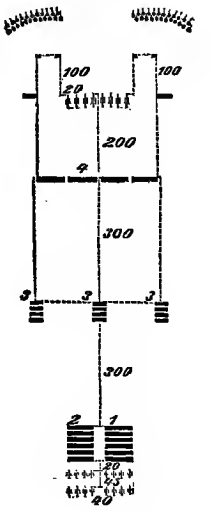


Fig. 83. 1st order of battle for a division of light cavalry, or reserve lancers, with two batteries.
Fig. 84. 1st order of battle for a division of dragoons, with three batteries.
Fig. 85. 1st order of battle for a division of reserve light cavalry, with three batteries.

two batteries are in reserve, each is formed as just described for a single battery.

The skirmishers represented in the plates are furnished by the flanker, or lancer, squadrons of the regiment in the first line, except those of the division of light cavalry of the guard, which are furnished by a regiment (two squadrons) of Cossacks.

The second order of battle.—This is employed when the division is supported by other troops, and should present an extended front to the enemy.

Divisions composed of six and eight squadron regiments are formed in two lines: the first consists of two regiments deployed; the second of the remaining regiments in columns of attack; there is no line of reserves.

Fig. 86 shows the peculiar formation of dragoon divisions in this order of battle.

Figs. 87 to 91 give all necessary information as to the formation of the other kinds of divisions.

The third order of battle.—This is established for the case when a division is to make a very energetic attack. In this case the division is formed in four lines; in the first line, one regiment deployed, with artillery on both flanks; in each of the other lines one regiment in columns of attack.

Figs. 92 to 97 give the necessary details.

Fig. 93 shows one exception to the rule in the case of a division of but three full regiments and one Cossack regiment of two squadrons.

Fig. 96 shows an exception in the case of a division of ten-squadron regiments, in which each line is composed of parts of two different regiments.

The *order of reserve* serves to concentrate the troops. It presents the following advantages: from it the troops can pass in the shortest time to any of the orders of battle; they can be most rapidly formed into one or several columns; any portion of the division can be detached without disturbing the general arrangement. In this order the division is arranged in two lines of close columns by squadrons, the senior regiment of each brigade on the right. Figs. 98 to 103 give the details. The batteries are formed in double column on the centre by half batteries. If the general commanding deems proper, he may place the artillery of each brigade in the intervals between the regiments, increasing, for this purpose, the usual interval of fifty paces to such an extent that there may be an interval of twenty paces between each flank of the artillery and the adjacent regiment; in this case, when the division is at a halt the chiefs of pieces of the leading half batteries align themselves on the front

Fig. 86.

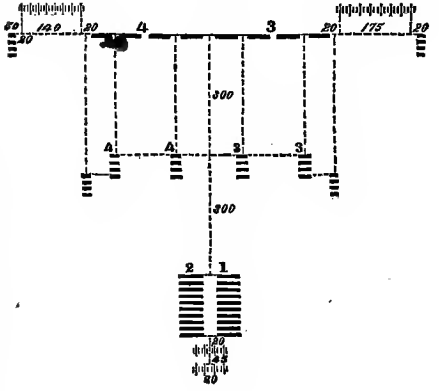
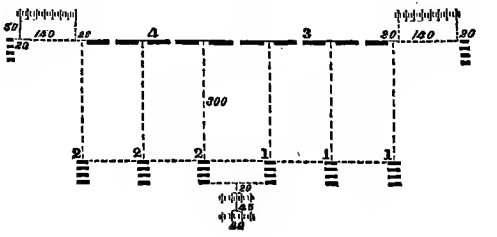


Fig. 87.



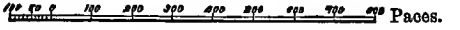


Fig. 86. 2d order of battle for a division of dragoons, with three batteries.

Fig. 87. 2d order of battle for a division of reserve light cavalry, with three batteries.

Fig. 89.

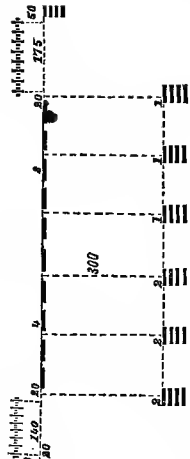


Fig. 88.

Fig. 88. 2d order of battle for a division of cuirassiers of the guard, with one battery.
Fig. 89. 2d order of battle for a division of army cuirassiers, with two batteries.

Fig. 91.

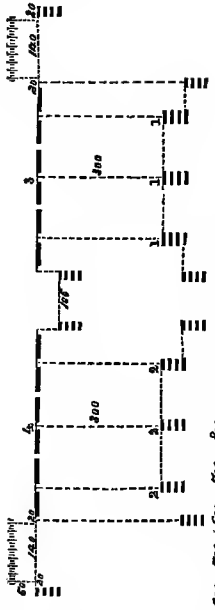


Fig. 90.

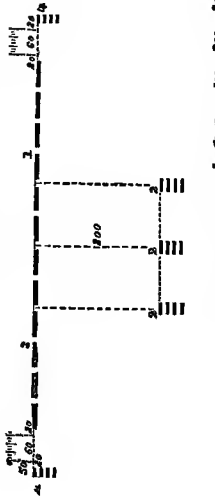
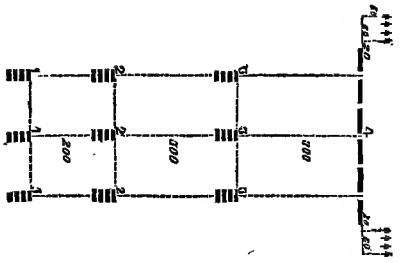
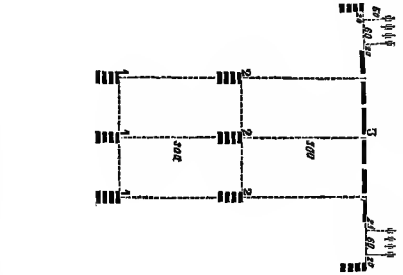


Fig. 90. 2d order of battle for a division of light cavalry of the guard, with one battery.
Fig. 91. 2d order of battle for a division of light cavalry, or reserve lancers, with two batteries.





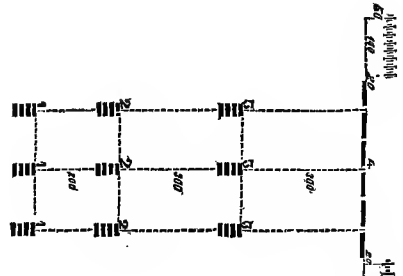


Fig. 92. 3d order of battle for a division of cuirassiers of the guard, with one battery.

Fig. 93. 3d order of battle for a division of light cavalry, with one battery.

Fig. 94. 3d order of battle for a division of army cuirassiers, with two batteries.

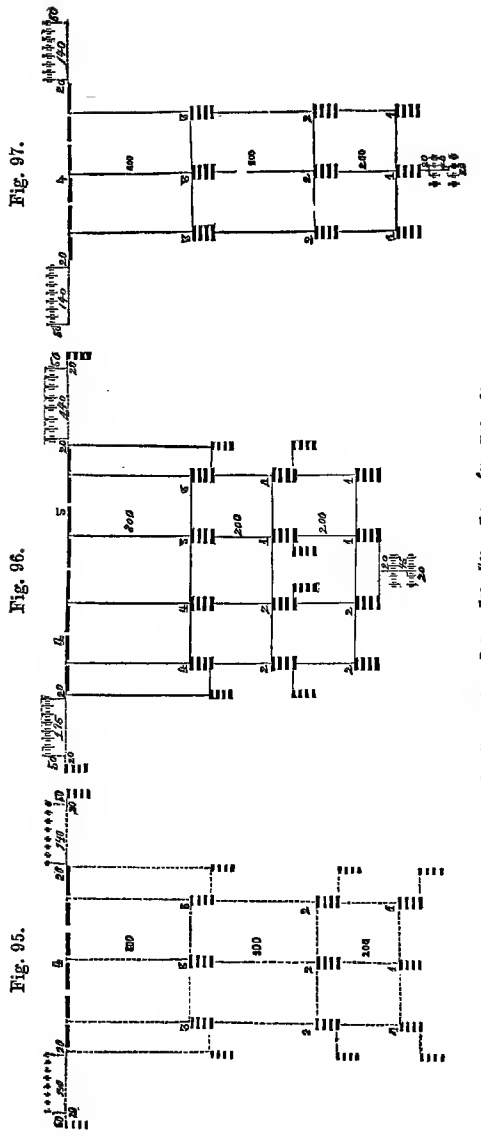


Fig. 95. 3d order of battle for a division of light cavalry, or reserve lancers, with two batteries.
Fig. 96. 3d order of battle for a division of dragoons, with two batteries.
Fig. 97. 3d order of battle for a division of reserve light cavalry, with three batteries.

Fig. 98.

Fig. 99.

Fig. 100.

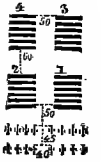


Fig. 98. Order of reserve of a division of cuirassiers of the guard.
Fig. 99. Order of reserve of a division of light cavalry of the guard.
Fig. 100. Order of reserve of a division of cuirassiers of the army.

Fig. 101.

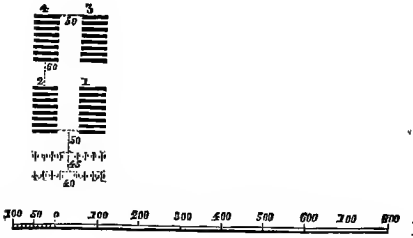


Fig. 102.

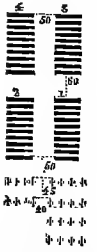


Fig. 103.

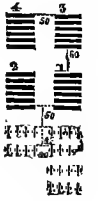


Fig. 101. Order of reserve of a division of light cavalry.
Fig. 102. Order of reserve of a division of dragoons.
Fig. 103. Order of reserve of a division of reserve light cavalry.

rank of the leading squadrons; on the march they align themselves on the file-closers of the leading squadrons.

GENERAL COLUMNS.

These are columns in which all parts of the division are so arranged that it can easily pass to one of the orders of battle.

A division of cavalry may be formed in one or two general columns. This formation is employed for taking up a position preparatory to action, or when in route; therefore such columns are called, respectively, *offensive columns* and *marching columns.*

For movements to a flank, and turning movements, the formation in two columns is used; these are called, respectively, *flank* and *turning columns.* General columns having the senior regiment in front are right columns, those having the junior regiment in front are left columns, whether each regiment be right or left in front.

In the formation of a division into columns, the general rule is that the odd-numbered regiments are left in front; the even, right in front. The commander may place the regiments and brigades in the columns as he judges best, without regard to the general rule.

Figs. 104, 105, 106, show the arrangement of the regiments of a division, in one or two columns.

In marching columns, the regiments move by platoons, breaking by sixes, or threes, when a decrease in the width of the road renders it necessary.

For movements in retreat, the parts of the division are arranged in the columns as for an advance, but in inverse order.

If a flank movement is to be made in sight of the enemy, or at but a short distance from him, each line forms a separate column, marching by platoons or threes, so as to avoid all shifting of parts, and to be able to form rapidly into order of battle; during the flank march, the artillery should march 100 paces within the 1st line of the cavalry; therefore, if the batteries were in position at the beginning of the movement, they limber to the rear, and follow the movement as here prescribed.

Although, in figs. 98 to 106, the artillery is represented as being in the centre of the brigades, it may be concentrated at the centre of the division.

RULES FOR FORMING IN ORDER OF BATTLE.

General rules.—The employment of the different orders of battle, and their adaptation to the ground and circumstances, depend entirely upon the generals of division, unless it is specified

General columns, for one division, with one battery.

Fig. 104.

Fig. 105.

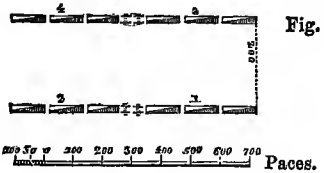


Fig. 106.

Fig. 104. In one column.
Fig. 105. In two columns.
Fig. 106. In two columns, right or left in front.

in the instructions for the corps exactly how each division is to form.

In all cases the generals of division are allowed to make the partial changes rendered necessary by the ground; besides which, a principal object is the choice of the most advantageous position for the artillery, as its success depends upon this choice. It is a general rule for the orders of battle, that the junior brigades and regiments of cavalry, and divisions and batteries of artillery, should be in front; an exception to this rule is made in the case of batteries of position, as they are always placed in the first line, the light batteries being in reserve. When the artillery is posted on the flanks of the line, the heavy batteries are on the right flank, the light on the left. As circumstances may render it necessary to employ one part of a division instead of another, changes may be made in the foregoing rules; but it is required that the regiments composing a brigade be kept together, unless it is absolutely impossible to avoid separating them. Thus, in the 1st order of battle, if the 2d regiment is in the 1st line, the 1st regiment should be in the 2d line, and the 3d and 4th in reserve.

In the 2d order of battle, it may be permitted to compose the right wings of both lines of one brigade, and the left wings of the other brigade.

A division forms into order of battle at the command of its chief, who designates as the directing subdivision either one of the squadrons of the 1st line, or the artillery, according to the ground and circumstances. The subdivision of direction is taken, in preference, nearest the new position of the troops.

In forming into order of battle from column, or in passing from one order of battle to another, the shortest road should always be taken; never using, however, the individual oblique march, which should never be employed for more than one or two squadrons; the artillery may oblique. The preparatory formations, and the movements themselves, are made by brigade, or by regiment, according to circumstances.

In all the general formations there should be an interval of 20 paces between the extreme pieces of artillery and the flanks of the nearest squadrons; the interval between the pieces themselves is: in light batteries, 20 paces; in heavy batteries, 25 paces. If there is no artillery on the flanks of the 1st line, the flanker, or lancer, squadrons of this line are not aligned upon the rest of the line, but are in rear of its flanks, as prescribed in the school of the regiment.

Batteries, in front of the 1st line of cavalry, are always aligned upon the principal reserves of the skirmishers; if there are no

skirmishers thrown forward, or if they are recalled, and the cavalry does not close up on the batteries, the latter fall back somewhat, and take post at from 100 to 120 paces in front of the 1st line.

The distance between unlimbered batteries and the 1st line is always measured from the line of pieces to the front rank of the 1st line.

Artillery in reserve is always placed in rear of the cavalry reserve.

The tactics then proceed to describe the different methods of passing to the orders of battle from column; of passing from one order of battle to another; of forming general column from the orders of battle. It then gives the application of the principles of the evolutions of the line to the orders of battle, under the following heads: advance in order of battle; retreat in order of battle; changes of front; passage of the line; the duties of skirmishers; of giving the commands. In all these cases the movements of the batteries are fully described. There is, in addition, a supplement, giving the position of the artillery in the different formations of a corps of cavalry.

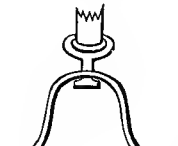
CHAPTER II.

EQUIPMENTS, ARMS, STABLES, HORSES, ETC., OF RUSSIAN CAVALRY.

HORSE EQUIPMENTS.

All the regular cavalry use the Hungarian saddle; this will be fully described when treating of the Austrian cavalry, and it is necessary to mention here only that the tree is of wood, not covered, the seat formed by a leather strap about 4 inches wide, nailed to the forks, and secured to the side-boards by leather thongs.

Light steel stirrups are used, the leathers passing through mortises in the side-boards.



The cuirassiers use a swivel-stirrup, as shown in the annexed sketch; it is spoken of as a good one. Crupper and breast-straps of black leather. Girth of leather, and fastened by three small buckles: it passes over the tree and is secured to the side-boards by leather thongs. Two leather pouches are attached to the tree. Saddle-blanket of stout felt cloth; four thicknesses are generally used, with a layer of thin black leather on top, the whole secured in form by leather thongs passed through and through; if the horse falls off in condition, additional thicknesses of felt are used, and *vice versa.* The shoe-pouches are pockets sewed on to the leather cover of the saddle-blanket.

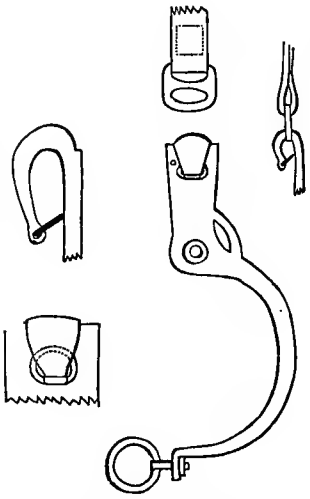
This felt saddle-blanket is regarded by the Russian officers as the best possible arrangement.

A small blanket is placed, folded, on the tree, under the schabraque. The schabraque is of thick woollen cloth, lined with coarse linen. Surcingle of leather, and fastens by means of ring and thong, in the fashion of a Mexican girth. Valise of cloth, not materially different from our own. Forage-bag of coarse white linen, open in the middle.

Bridle and bits.—By all the regular cavalry a curb and snaffle are used, both of steel. There are three marked peculiarities in the curb-bit: it hooks to a ring at the end of the

cheek-strap, as shown in the following sketch; the rings are attached to the branches by means of swivels; the branches are reversed, that is, their convexity is turned towards the front.

With regard to the manner of fastening the bit to the head-stall, it will be perceived from the sketch that the little ring which is passed through the end of the hook of the branch, and rests against the flat side of the latter, effectually prevents the bit becoming unhooked, unless the ring is raised by the finger.



The snaffle-bit, a plain one without horns, is fastened to the head-stall by a chain and toggle, like the centring-bits in the United States service. This arrangement of the curb and snaffle permits the men to feed their horses during short halts without inconvenience; the Russian cavalry officers represent it as being every thing that can be desired. The curb-chain is of steel, and very heavy. There are three patterns of the curb used, of different degrees of severity.

The head-stall and reins are of black leather; no martingale. Crown-piece single, and has a spare curb-chain on top of it. Cheek-pieces buckle to the crown-piece, on each side, by one buckle. Each cheek-piece is a single strap, split at bottom to receive the rings by means of which the bits are attached.

The nose-band passes through loops on the cheek-pieces.

Two plaited cords of black leather run diagonally across the horse's face, from the brow-band to the nose-band; there is a leather rosette at their intersection.

There is nothing peculiar about the halter; by attaching the snaffle-bit and reins it becomes a watering-bridle; halter-rope 9 feet long and half an inch in diameter.

Forage-cord, for use when sent foraging, half an inch in diameter. Curry-comb and brushes large and coarse; brushes have the back and edges covered with black leather. Mane-combs of metal and of horn.

Spurs of steel, and permanently screwed to the heel of the boot.

Lancers have a lance-boot attached to each stirrup.

The Cossack saddle has a thick padding under the side-boards and on the seat; it places the man very high on his horse, so that his feet are always above the bottom of the belly.

Their bridle has but the simple snaffle-bit,—no curb nor martingale.

The Cossacks of the guard have spurs; the others have whips, slung to the wrist, instead of spurs.

The Mussulman cavalry make use of the well-known Oriental horse equipment.

SADDLING AND PACKING.

The tree being girthed tight, the pouches are filled; in these are placed the hatchet, curry-comb, brush, mane-comb, and other cleaning-utensils, with various small articles. The overcoat is then rolled into a long, thin roll, and strapped to the tree over the pouches; the roll falls down on each side, and is of such a length as to be just covered by the schabraque.

If the uniform coat is to be carried on the saddle, it is placed as described for the overcoat.

The small blanket is then folded and placed on the tree.

The schabraque is put on and secured.

The valise, containing shaving-utensils, soap, and under-clothes, is now strapped tightly to the cantle, over the schabraque.

The forage-bag, containing habitually three days' rations, is strapped to the cantle, over the valise, and lies on the schabraque, falling down on each side between the valise and saddle. The stable-frock is carried either with the forage-bag or overcoat.

The hay, made up in elliptical rings by hay ropes, is strapped to the cantle, and lies on the schabraque behind the man's leg.

The forage-cord and halter are attached to the rear of the side-boards, under the schabraque.

Spare boots are carried on top of the valise, under the flap, heels outward. The camp-kettle fits on the end of the valise, and is secured there by straps. One man of every three carries a copper camp-kettle as above; every man a small hatchet; one man in every platoon carries a spade, slung to the pommel, the blade in a leather case.

ARMS AND ACCOUTREMENTS.

Cuirassiers.—Steel helmet, breast and back pieces; these are

in some regiments of bright steel, in others gilt, in others painted black.

Sabre, (pallasch,) a straight, flat, double-edged blade, 39 inches long; it is the sabre described in Thiroux, pp. 146–148, as the model of "L'an XI et XII;" steel scabbard; guard of brass, and of the basket form.

Sabre-knot, a flat strap of brown leather.

Sabre-belt, of white leather waist-belt, with slings—plate hooks, like those of United States officers—and is worn under the cuirass.

Each man has one pistol, with percussion lock; a cord is attached to a ring in the butt, and passes around the neck; the *pistol* is carried in a holster on *the waist-belt. This rule is general for all the cavalry.*

In each platoon are four men who act, when necessary, as skirmishers; they are armed with rifled carbines, the barrels of which are about fifteen inches long; the carbine-sling is like that in use in the United States service, and is worn very short; the rammer is attached to the sling.

A cartridge-box, holding twenty rounds, is slung over the left shoulder; the box is attached to the belt by swivels; cap-pouch on cartridge-box belt on the breast. The front-rank men are armed with lances 10½ feet long; pennons on the lances.

Lancers.—Lance 10½ feet long; pennons of same color as facings of the uniform; sling of leather; point of lance seven inches long; a lance-boot attached to each stirrup.

The sabre is three feet long in the blade; a little less curved, and rather broader and thinner, than the United States light-artillery sabre; scabbard of steel; guard with but one branch, and of steel.

Sabre-knot as for cuirassiers. Sabre-belt of brown leather, and worn under the coat. Each man has one pistol, as for cuirassiers. Four men in each platoon carry rifled carbines, with a longer barrel than that of the cuirassiers; these men have no lances.

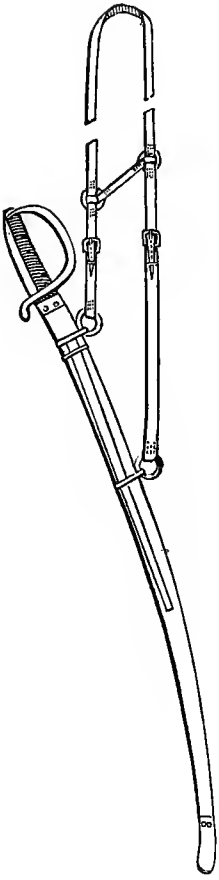
Cartridge-box as for cuirassiers.

Hussars.—Sabre, sabre-belt, pistol, and cartridge-box, as for lancers. Four men in each platoon carry a rifled carbine, the rest a smooth-bore carbine; the carbine is always carried on the sling, there being no carbine-boot. Hussars have a sabretasch.

Dragoons.—Each man of the first eight squadrons armed with sabre and musket; the 9th and 10th squadrons armed as lancers.

In the first eight squadrons the arms, &c., are as follows:

Sabre blade and hilt as for hussars.



The annexed sketch shows the peculiar arrangement of the scabbard and belt; the scabbard being of leather, tipped with brass, the rings on the convex edge; bayonet-scabbard attached to flat side of the sabre-scabbard, by brass bands; the belt, a Circassian shoulder-belt, without waist-belt, and of such a length that when the sabre is drawn the top of the scabbard is just under the left elbow; when the sabre is in the scabbard the hilt is between the elbow and the body.

Smooth-bore musket, with the ordinary bayonet; the piece about four inches shorter than the United States musket, and somewhat lighter; it has a common musket-sling. It is usually carried in a water-proof gun-case, with a separate sling, over the right shoulder, muzzle up, barrel against the back; this case opens by a slit under the stock, which is closed by straps and buckles; the butt end is sewed up. Cartridge-box carried as for hussars, but contains 40 rounds.

The sergeants alone carry pistols.

Cossacks of the guard.—Sabre and scabbard like those of the dragoons, except that there is no guard, and no bayonet-scabbard. Sabre-belt like that of hussars. Musket like that of dragoons, but no bayonet. Cartridge-box like that of dragoons. Lance 10½ feet long, without pennon; instead of having a lance-bucket attached to the stirrup, a leather strap is fastened to the butt of the lance, and the foot run through the loop before placing it in the stirrup. Each man also carries a pistol on his waist-belt.

Cossacks of the line of the Caucasus.—Sabre and scabbard as for the Cossacks of the guard; sabre-belt like that of the dragoons. A long musket slung over the shoulder; cartridge-box as for Cossacks of the guard; pipes for ten or twelve cartridges sewed on the breast of the coat. Two or more pistols, on waist-belt, and in holsters. A long, broad poniard. No lances.

Tscherkesses.—Armed as Cossacks of the line of the Caucasus. The officers carry bows and arrows, to enable them to cut off sentinels without creating an alarm.

Other Cossacks.—Usually armed with lance, sabre, and pistol. About ten men in every squadron carry muskets; in some cases all the men have muskets.

Mussulmen of the guard.—Armed in the Oriental style.

All the irregular cavalry carry their arms very close to the body, and so arranged as to make the least possible noise.

Mounted gendarmes.—Sabre and belt like those of hussars. Dragoon musket; bayonet-scabbard on the waist-belt; cartridge-box on a shoulder-belt. Pistol carried either on the saddle or the waist-belt.

Officers wear a sabre similar to that of their men.

HORSES, AND THE MANNER OF PURCHASING THEM.

In each regiment of cavalry, and battery of artillery, the horses are all of the same color.

The Russian cavalry is, probably, the best mounted in Europe,—certainly the best on the continent. The English heavy-cavalry horses may be somewhat better, but they have nothing for light cavalry to compare with the mass of the Russian animals for that purpose. The heavy-cavalry horses are mostly purchased in the provinces of Tamboff and Woronège, at an average price of $90 each.

The light-cavalry horses are obtained from the Ukraine and the steppes, at an average price of $45.

The artillery horses are bought in all parts of the empire, at about the same rate as those for the light cavalry.

There are no *haras* (breeding-studs) for the general service of the army. There is a commission charged with the general direction of the purchase, inspection, and distribution of remount horses.

They, if necessary, establish sub-commissions, in convenient localities. The horses are purchased by cavalry officers detailed for the purpose, and are then, if practicable, inspected by the commission, or one of the sub-commissions. Having passed the inspection, they are distributed among the regiments, at the rate, in time of peace, of about 150 per regiment each year. The colonel of the regiment then distributes them among the squadrons, where they are broken in and drilled by the old soldiers, under the direction of the captain commanding. The Russians have nothing corresponding to the "captain instructor" of the French service.

Horses are purchased at the age of from three to five years; those purchased at three years old are not used for a year or more.

About eight years' service is expected of a horse.

Remount horses enter the squadron at from four months to one year from the commencement of their drilling; depending upon the age of the animal, his disposition, &c.

Mares are preferred, as a general rule, but geldings and stallions are also used; and it is stated that no particular inconvenience is found to result from the employment of stallions.

The horses being once assigned always remain with the same men. Officers purchase their own horses, and are allowed forage, or a commutation therefor.

RIDING-HOUSES.

These are numerous, large, and well constructed.

The windows are usually arranged as in the French; Russian stoves are freely used for warming them.

The floor is of earth and sand. There is a wooden wainscot-lining, about six feet high, and having an inclination of about $\frac{6}{1}$; the corners not rounded off.

The riding-house of the Chevalier Guard, in St. Petersburg, is 300′ long, 95′ wide, and 25′ ceiling. One near the Paul Palace is 595′ long, 126′ wide, and 25′ ceiling. The great riding-house at Moscow is much larger. The two latter are used for drills and inspections during the winter. There are no pillars in any of these.

STABLES, ETC.

There is nothing remarkable in the Russian stables. The floors are generally of plank, a little straw being kept under the horses' fore-feet during the day; in some stables the floor is of clay.

As a general rule, the simple swinging bar is used to separate the stalls; sometimes there is no division whatever; for wicked stallions the stalls are boarded up.

In many cases they use no hay-rack,—merely a long wooden trough, one end of which is divided off for the oats.

In some cases they use wooden or iron racks and mangers.

In some stables a bin is arranged for the litter, under the manger; in others it is kept in the stable-yard, under cover.

The saddles, bridles, and other equipments are usually kept in the stables; the bridles being hung on pins attached to the stall-posts; the saddles, blanket, &c., on a shelf extending between the heel-posts.

Some of their stalls are six feet wide; as a general rule they are quite large. The stables are well ventilated, and kept in good order.

In some stables the quarters for the men are in the 2d story, over the stables.

The horse-hospitals are usually in separate buildings, with separate box stalls, (about 9′ × 7′,) boilers for making mashes, &c.

The horses are cleaned twice a day, watered twice or thrice, and fed three times.

The daily ration for a light-cavalry horse is 9 pounds of hay, 11 quarts (13¾ pounds) of oats, 3 pounds of straw. The heavy-cavalry horses receive 2 quarts of oats more than the light-cavalry.

The hay is generally chopped before being fed to the horses.

The ration is increased with the difficulty of the service; the above being a minimum for easy garrison service.

The horses are shod in each squadron by its shoeing-smith.

There is nothing peculiar in the shoes, which are light, but strong, and with small heels.

FIELD SERVICE.

In the field each horse carries, habitually, 3 days' rations of oats and hay. The animals are sometimes tied by the halter to a picket-rope, or a picket-stake, and sometimes fastened by the right fore-foot to a picket-rope on the ground.

When picket-pins are used, they are cut by the men on the spot, or carried along if it is expected to encamp in a place destitute of timber. The Cossacks hobble their horses.

The Russian cavalry do not spare their horses at drill, or on the march, but bestow all possible pains upon them in the stable, or in camp. In bivouac, or in camp, they are clothed with the saddle-blanket if the weather is bad and cold.

The habitual gait on the march is the walk, of about 3½ miles per hour; sometimes the trot is used; every hour or so a halt of a few minutes is made, after which the men lead the horses for about three-quarters of a mile. An ordinary march is from 16 to 26 miles a day, depending on the nature of the country.

The Cossacks regard a march of 45 miles as nothing extraordinary.

After drill the horses are walked until they are cool.

They are never unsaddled until quite cool.

At squad drills, in warm weather, some men are present with buckets of water and sponges to wash out the horses' mouths occasionally.

In the field, the cavalry carry 1 day's rations in a haversack.

REMARKS UPON COSSACKS, DRAGOONS, LANCERS, ETC.

There are two peculiarities which cannot fail to arrest the attention and command the reflection of the observer of the Russian cavalry; these are: the general division of the cavalry into regulars and irregulars; and the corps of dragoons.

The irregulars may be comprehended in the general name of Cossacks. Yet their peculiarities of armament, costume, and action are as varied as their origin; while the sources of the latter are as multifarious as the tribes which compose the mass of Russian nationality, and the circumstances which, through centuries of warfare, have finally united into one compact whole a multitude of conflicting and heterogeneous elements. But, with all this diversity, there are important and peculiar characteristics which pervade the mass, and are common to every individual, with as much uniformity and certainty as that with which the firm government of the Czar is now extended over them. These peculiarities are: intelligence, quickness of vision, hearing, and all the senses; individuality; trustworthiness on duty; the power of enduring fatigue, privation, and the extremes of climate; great address in the use of weapons; strong feeling for their common country; caution, united with courage capable of being excited to the highest pitch: in short, the combination of qualities necessary for partisan troops. The events of more than one campaign have proved, besides, that these irregulars can be used successfully in line against the best regular cavalry of Europe.

Circumstances of geography and climate have given to these men a race of horses in every way adapted to their riders; the Cossack horse is excelled by none in activity and hardiness.

The Cossack neglects no opportunity of feeding his horse; during short halts, even under fire, he gives him whatever is to be had; the horse refuses nothing that is offered him, and eats whenever he has the opportunity, for he has not acquired the pernicious habit of eating only at regular hours. Some idea may be formed of the power of endurance of the Cossacks and their horses from the fact that, in a certain expedition against Khiva, there were 3,500 regular Russian troops and 1,200 Cossacks: of the regulars but 1,000 returned, of the Cossacks but 60 perished.

The tendency of events, during the present century, has been to assimilate the organization of the Cossacks to that of the regulars, to a certain extent: whether the effect of this has been to modify or destroy their valuable individual character-

istics may yet remain to be proved in general war; the events of the campaign of Hungary are said to indicate that more regularity of action has by no means impaired their efficiency.

This brief description of the qualities of the irregular cavalry indicates at once the use made of them in war; they watch, while the regulars repose. All the duty of advanced posts, patrols, reconnoissances, escorting trains, carrying despatches, acting as orderlies, &c., is performed in preference by the Cossacks; the consequence is, that, on the day of battle, the regular cavalry are brought upon the field in full force and undiminished vigor. Under cover of these active irregulars, a Russian army enjoys a degree of repose unknown to any other; while, on the other hand, it is difficult for their antagonists to secure their outposts and foil their stealthy movements.

The rapidity and length of their marches are almost incredible; a march of 40 miles is a common thing; they will make forced marches of 70 miles; in a thickly-settled country they have, in two days, made six marches of ordinary cavalry without being discovered.

In concluding this subject, it is impossible to repress the conviction that in many of the tribes of our frontier Indians, such as the Delawares, Kickapoos, &c., we possess the material for the formation of partisan troops fully equal to the Cossacks; in the event of a serious war on this continent, their employment, under the regulations and restrictions necessary to restrain their tendency to unnecessary cruelty, would be productive of most important advantages.

In our contests with the hostile Indians, bodies of these men, commanded by active and energetic regular officers, and supported by regular troops, would undoubtedly be of great service.

The term *dragoon* was originally applied to troops who were at the same time cavalry and infantry. For example, the French dragoons of the time of Louis XIV. would on one day, as cavalry, meet and defeat the Imperial cuirassiers, and on the next day form the assaulting column in the attack of a breach.

It is necessary not to confound the true dragoon with such troops as our mounted rifles, for instance, whose proper purpose is to use the horse merely as a means of rapid locomotion, *always* dismounting and fighting on foot upon reaching the scene of action.

The Russian dragoons are the only real dragoons in the world; their arms, equipment, &c., have been heretofore described.

They are principally employed in covering retreats, occupying isolated posts, making sudden attacks upon villages, &c.

When they dismount to fight on foot, one man of every three remains mounted, and holds the horses of the others; one officer remains mounted with each squadron.

When dismounted, they conform to the infantry tactics.

Since the 9th and 10th squadrons, armed as lancers, do not dismount, each regiment furnishes a battalion of about 800 infantry.

The idea has been thoroughly carried out; for they are in reality good cavalry and good infantry.

It is a question at least worthy of consideration, whether it would not be advantageous in the United States service to make real dragoons of the regiments now nominally so, employing them always in those portions of our territory where the Indians frequent the plains but retire to the mountains when hard pressed; at the same time making the so-called cavalry regiments mere regiments of light cavalry, to act only on the plains, and not to be expected to fight on foot.

The lances of the front rank of the cuirassiers are intended to be used only in close order; while the lancer regiments proper are taught to use the lance both in close and open order.

From the great use of the lance in the Russian service, it will be seen that it is a favorite weapon with them.

I have been told by an old general of Cossacks, who served from Austerlitz to Paris, and against the Persians and Turks, that "the Cossack never uses his sabre, but depends altogether on his lance, and uses his carbine only to give signals." He was also strongly in favor of snaffle-bits, sharp spurs, and Balaklava charges. Nevertheless the chasseurs d'Afrique told marvellous stories of the expertness of the Cossack in the use of the musket on horseback; and the Cossacks of the line of the Caucasus, engaged almost daily in hand-to-hand conflicts, have abandoned the lance, and they are more dreaded by the mountaineers of the Caucasus than any other Russian troops.

Against the Indians of our plains, who have no sabres, the far-reaching lance would no doubt be an effective weapon; yet a light sabre would be about as much so, and far less in the way.

PRUSSIAN CAVALRY.

ORGANIZATION.

THE war establishment of the Prussian cavalry consists of the standing army, the landwehr of the first levy, that of the second levy, the depot squadrons, and the landsturm.

All able-bodied men, whatever their rank in life, are required to serve 5 years in the standing army, from their 20th to their 25th year. Of these 5 years, the first 3 are passed with their regiments; during the last 2 they are permitted to return to their homes and compose the reserve of the standing army, being liable to be called to join their regiments at any moment, in the event of a war or other exigency.

They then pass into the landwehr of the 1st levy for 7 years; then, for 7 more, into the landwehr of the 2d levy; after which, they belong to the landsturm.

The standing army performs garrison duty in time of peace. As a general rule, the regiments are stationed in the districts where they are recruited, unless there are special political reasons to the contrary.

The landwehr of the 1st levy is at once called out, upon the commencement of a war, to reinforce the standing army and co-operate with it; its organization and composition are identical with those of the latter, there being a regiment of landwehr cavalry to correspond to every one of the cavalry of the line, and 2 landwehr regiments of the guard. In war they are usually brigaded together; thus the 2d hussars of the line and the 2d hussars of the landwehr belong to the same brigade.

In peace, this levy is called out for drills and manœuvres 2 weeks in each year; at other times merely a skeleton, consisting of 1 captain of the line, 2 non-commissioned officers, and 2 men, is kept at the depot magazine of each landwehr regiment, the complete clothing, armament, and equipment of the regiment being kept in these magazines.

The landwehr of the 2d levy is not quite so numerous as that of the 1st. It is called out only in time of war, and is then

employed in service in the interior, or, if necessary, to reinforce the active army.

The landsturm has no regular organization; it is called out only to repel invasion, and consists of all men less than 50 years old not in the army or landwehr.

The depot squadrons are organized only in time of war. They consist of supernumeraries from the reserve, men drafted from the landwehr, and recruits who are to be drilled 6 months before joining their regiments.

Every regiment of the cavalry of the standing army has one depot squadron in war; those of the guard are of the same strength as the active squadrons; those of the line are 200 strong, since they serve as depots for the corresponding regiments of landwehr of the first levy as well as for those of the line. One hundred and twenty-five men and horses belong to the line regiment; the remaining 75 are for the landwehr.

The war strength of these different kinds of cavalry amounts to 440 squadrons,—2,400 officers and about 65,000 men and horses; this is exclusive of the landsturm.

The cavalry of the standing army consists of 38 regiments, of which 6 belong to the guards, 32 to the line.

The guard regiments are: 2 regiments of cuirassiers, 1 of dragoons, 2 of lancers, and 1 of hussars.

The line regiments are: 8 of cuirassiers, 4 of dragoons, 8 of lancers, and 12 of hussars.

Each regiment consists of 4 active squadrons.

Each squadron of the line regiments is composed of:

1 captain.
1 first lieutenant.
3 second lieutenants.
1 orderly sergeant.
1 ensign, a non-commissioned officer in the line of promotion.
1 quartermaster, a sergeant.
12 sergeants.
3 trumpeters.
127 privates, among whom are 20 corporals and re-enlisted soldiers:—145 men and horses, exclusive of officers.

The regimental staff consists of 1 colonel, 1 junior field officer, 1 adjutant, (a second lieutenant,) 2 supernumerary captains, 1 paymaster, 1 surgeon, from 2 to 3 assistant surgeons, 1 chief trumpeter, 1 regimental clerk, 4 veterinaries with the rank of orderly sergeant. The supernumerary captains are for the purpose of commanding the skeleton of the corresponding landwehr regiment and the depot squadron, as well as for other detached service.

The junior field officer commands the corresponding landwehr regiment, the captains and adjutant of which are also taken from the line. The squadrons of the guard regiments are stronger by 5 privates than those of the line.

TACTICS AND INSTRUCTION.

The riding drill is a separate work from the tactics proper; it is so very similar to the Austrian that it need not be further explained.

The instruction on foot is embraced in the first 36 pages of the tactics, and includes the drill of the recruit, the movements of the squadron and regiment, and the formations for parade, review, &c.

The squadron is the unit of tactics, as well as of interior service. When mounted, it is formed in two ranks, 1 pace apart, the rear-rank covering their front-rank men, and is divided into 4 platoons, numbered from right to left.

In each platoon the men call off by twos for mounting and dismounting; by threes for manœuvring.

The officers, non-commissioned officers, &c., are posted as follows:

The captain, 30 paces in front of the centre; the 1st lieutenant commands the 3d platoon, and is 2 paces in front of its centre; the 2d lieutenant commands the 4th platoon; the 3d lieutenant is a file-closer, in rear of the centre; the 4th lieutenant commands the 1st platoon; the 5th lieutenant commands the 2d platoon.

The sketch on page 120 represents a squadron deployed.

If there is no 5th lieutenant, the 2d platoon is commanded by the ensign, or a suitable sergeant.

If there are but 2 lieutenants present, they command the flank platoons.

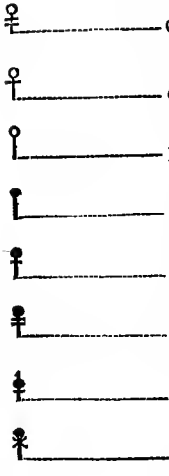
The captain may change the arrangement of the officers, as given above, if he thinks proper.

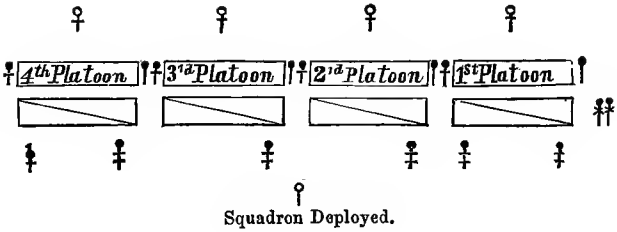
The sketch gives the positions of the non-commissioned officers and trumpeters.

There must be one file-closer for each platoon; if there is a deficiency in the number of sergeants, corporals are detailed to supply their places.

To dismount, the chiefs and left guides of platoons, and Nos. 1 of the front rank, ride forward twice a horse's length, the chiefs of platoons then face towards their men by making a right about; the right guides, Nos. 2 of the front rank, and Nos. 1 of the rear rank, move forward a horse's length; Nos. 2 of the rear

Explanation of signs





Squadron Deployed.

rank and the file-closers stand fast; the trumpeters act as prescribed for the rear rank.

Having dismounted, Nos. 2 of each rank and the right guides close up alongside of the Nos. 1 of their own rank; the file-closers close up on the rear rank; the ranks are thus 4 paces apart.

To mount, the ranks are formed 4 paces apart, and the Nos. 1 of each rank, with the left guides, move forward a horse's length.

Having mounted, the ranks are closed on the Nos. 1 of the front rank.

The movements of the squadron are by threes, —never by fours.

The annexed sketch shows the formation of a squadron gaining ground to the right after having wheeled to the right by threes in each rank.

The squadron may be re-formed into line either by wheeling to the left by threes, or by forming to the front into line; in the latter case the front-rank men of the leading set of threes move forward two horses' lengths and halt, their rear-rank men take their places behind them, and the other sets of threes gain their places by obliquing to the left.

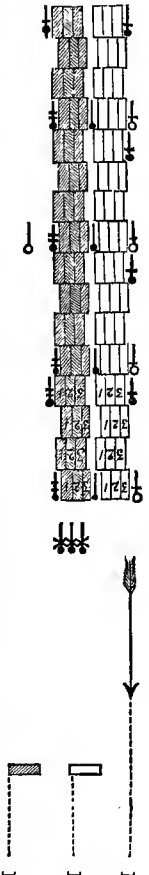
Platoons may be formed in the same manner.

The annexed sketch will serve to explain the peculiarity in the column by threes, and the column by files; in the column by threes the rear-rank men, instead of covering their front-rank men, ride behind the intervals, as shown in the sketch; in the column by files, in which each rear-rank man is alongside of his front-rank man, the same thing is observed by the successive files.

In column by platoons, the non-commissioned file-closers place themselves on the flanks of the rear rank; the officer acting as file-closer is on the flank of the column opposite the guides, and opposite the middle of the column.

The *half column* is formed from line by causing all the platoons to make, simultaneously, a quarter wheel to the right, (or left,) and then all move straight forward.

In a charge in line, 500 paces are passed over at the walk and trot, 200 at the gallop, and 100 at the charge.



Sometimes the 4th platoon charges in one rank, in open order, and is supported by the remaining platoons in close order.

Again, the 1st, 2d, and 4th platoons charge helter-skelter, as foragers, and are supported by the 3d platoon, which remains in close order.

SKIRMISHERS.

The 4th platoon is usually employed for skirmishing-duty.

At the command of the captain the chief of this platoon conducts it to a point from 150 to 200 paces in front of the centre of the squadron, and there halts it. The four left files (or as many more as may be directed) return sabres, or rest lances, and at once dash out about 100 paces to the front at a gallop, and there form in one rank with sufficient intervals to enable them to cover the whole front of the squadron; the rear-rank men are on the left of, and near to, their front-rank men.

One man of each file must always have his piece loaded.

They halt while firing, but keep moving while loading, describing a figure ∞ as they ride.

Since the skirmishers are intended to cover the squadron, they, as well as the rest of the platoon, must conform to all its movements.

When any party of cavalry is obliged to dismount to fight on foot, the Nos. 3 of each rank remain mounted, and hold the horses of Nos. 1 and 2.

The formation of a regiment deployed is with its 4 squadrons in line, with intervals of 6 paces; the standard on the right of the 3d squadron; the colonel, accompanied by the adjutant and 2 trumpeters, 60 paces in front of the centre; the junior field officer 20 paces in rear of the centre of the regiment.

A regiment may be formed in column by squadrons closed in mass, the distance being platoon front *plus* 6 paces; by squadrons with full distance; by platoons doubled on the central platoons; and in line of columns of squadrons by platoons.

A regiment being in line, the front is changed by squadrons: *e.g.*, to change front forward 90° on the 1st squadron the 1st squadron wheels to the right and halts, the other squadrons each make a half wheel to the right, then march straight forward until they arrive opposite their respective places in the new line, when they again half wheel to the right into their places.

To deploy a close column the leading squadron halts, the others wheel by platoons to the left, (or right,) march straight forward until they arrive opposite their places in line, when they wheel by platoon to the right, (or left,) and advance in line to their posts. This deployment is executed at a trot.

During a charge in line the standard-bearer falls back into the rear rank.

If the ground over which a charge is to be made is not known, an officer is sent forward to examine it and report to the colonel.

The entire force of a regiment should not charge, but some of the flank platoons should be held in reserve.

Sometimes the 4th platoons of all the squadrons, or one entire squadron, charge as foragers, supported by the rest of the regiment in close order.

Sometimes the 1st, 2d, and 4th platoons of all the squadrons charge, while the 3d platoons, under the command of the junior field officer, are held in reserve.

The charge by echelons is also employed.

A regiment being formed in column by squadrons, there are two methods of employing it in a charge:

1st. The column being right in front, the 4th squadron leaves the column and forms, the 1st and 2d platoons on the right, the 3d and 4th on the left flank of the column, the commandants of these platoons being on the alignment of the file-closers of the 3d squadron; the column then moves off at a trot, next at a gallop; as soon as it takes the gallop the 1st squadron charges; when the colonel gives the command, *halt*, the 4th squadron charges as foragers.

2d. The column being right in front, moves forward at a trot; the 1st squadron then charges, and afterwards retires by the flanks of the column to the rear, where it re-forms; the other squadrons then charge in succession in the same manner.

If skirmishers are to be deployed to cover the regiment, either the 4th platoons of all the squadrons, or one entire squadron, are detailed for the purpose.

If the regiment is to dismount to fight on foot, it is effected upon the principles explained for a single squadron.

In a brigade deployed, the interval between the regiments is 12 paces. The general of brigade is 100 paces in front of the centre, and is accompanied by the brigade adjutant and two trumpeters.

HORSE EQUIPMENTS.

The cuirassiers use a heavy saddle, with a low pommel and cantle; it is covered with leather, and presents nothing worthy of imitation.

The rest of the cavalry have the Hungarian saddle; it differs from the Austrian model principally in the manner of attaching the equipment; the forks are permanently bolted to the bars; there is more iron-work upon it, and small skirts are attached to it.

Eight sizes of trees are made; the average weight of the bare tree is seven pounds.

The English saddle is the uniform for officers; they use a girth of hemp cords.

For the men, the valise is replaced by a flat bag, opening in the middle of the lower side, which contains the clothes, and is laid on the tree, under the schabraque, the man sitting on it.

The pouches are large and heavy; they are attached to the saddle by spring hooks, and contain many of the necessaries.

The pistol-holster is in one of the pouches; also a pocket for extra cartridges; to one pouch the hatchet is attached.

The cloak and forage-bag are strapped to the cantle; the kettle, in a leather case, is attached to the left side of the hind fork. The schabraque is of blue cloth, with a lining of coarse linen; it has pockets in the lining.

Cruppers and breast-straps are used; the surcingle is of leather, and fastens in the Mexican style; the girth is also of leather, about 3½ inches wide, and with a large buckle; it is in two parts, and is attached to the bars by thongs of raw hide.

The saddle-blanket is 8′ by 6′ 3″; it is folded in 12 thicknesses.

The forage-bag is of white linen.

The forage-cord has an iron ring at one end.

The nose-bag is of coarse linen, the bottom bound and crossed with broad linen tape.

The curry-comb is 6″ by 4″, with four rows of teeth; one pattern, for field service, has a strap attached to the back, instead of a handle, the hand being run under the strap.

The mane-comb is of horn; metallic combs have been tried and abandoned.

The shoe-pouches, one on each side of the hind fork, contain, each, 1 fore and 1 hind shoe, as well as 16 common and 4 *ice* nails, in a straw cushion.

The stirrups are of steel, and roughly made.

A hemp surcingle is used in the stable.

Two bits are used, both of steel; the curb has straight branches, and a heavy steel chain.

The headstall is single; the curb is buckled to the cheek-pieces; near its lower end a strap about 2″ long is sewed to one side of each cheek-piece; the snaffle is attached to a ring at the end of this strap by a chain and toggle.

The curb-reins are 4′ long. No martingale is used.

The halter presents nothing peculiar: the rope is 6′ long, and is either of hemp or hair; in garrison a chain is sometimes used. By attaching a snaffle-bit and rein, the halter serves as a watering-bridle.

The Russian bit is being tried: in this experiment the snaffle fastens to the halter-headstall by a chain and toggle, while the curb-headstall, which is very light, passes through loops on the halter.

All articles of each set of equipments are branded with the number of the set.

ARMS AND ACCOUTREMENTS.

Cuirassiers, sabre of the old French cuirassier pattern; 20 men in each squadron have a smooth-bore carbine, with a barrel 15″ long; the rest of the men a pistol, with a 9″ barrel.

Dragoons, light-cavalry sabre, blade 32″ long, and 1½″ wide at the shoulder, considerably curved, guard and scabbard of steel; sergeants and trumpeters, 1 pistol each; 50 men in each squadron have a rifled carbine, the rest a smooth-bore carbine.

Lancers, sabre as for dragoons; lance 10½′ long; firearms as for cuirassiers.

Hussars, armed as described for dragoons.

The cuirassiers have metallic helmet, breast and back pieces.

The sabre-belt is an ordinary waist-belt with slings; it fastens by means of an ∽ hook.

The cartridge-box is attached to a shoulder-belt; it contains 18 rounds; it is filled by a wooden block, in which a hole is bored for every cartridge.

The carbine, or pistol, rammer is attached to the cartridge-box belt by a thin strap, the rammer being slipped through two loops on the cartridge-box.

The carbine-sling is not peculiar.

On the march the carbine is carried in a boot, the small of the stock being strapped to the pommel.

UNIFORM.

The dragoons wear a helmet of black leather, surmounted by a brass spear-head.

The lancers have the ordinary lancers' cap, the czapka.

The hussars, a cylindrical shako of fur, without visor.

The forage-cap has no visor.

The clothing is of excellent material, and is well made; it is made up in the regiments.

A short frock-coat is worn by all the cavalry.

Coat and pants are lined throughout.

The pants are re-enforced with black leather, and are split about 6″ from the bottom, along the outer seam, the slit fastening with hooks and eyes; straps of leather are sewed to the pants.

Boots are worn under the pants; steel spurs are permanently attached to the boots.

The overcoat has a large rolling collar, and no cape; it is of a dark-gray color, nearly black.

The stock is of bombazine, lined with linen; it has a flap in front, and fastens by means of a buckle.

The buttons are plain.

Shirts, socks, and cloth mittens are issued.

HORSES.

There is a central commission at Berlin charged with the regulation of the purchase of horses.

For this purpose, the monarchy is divided into three districts: 1st, the country east of the Vistula; 2d, that from the Vistula to the Elbe; 3d, the Rhenish provinces.

There is a sub-commission for each of these districts, and several remount depots.

The horses are purchased between the ages of 3 and 7, the preference being given to young horses, which remain at the remount depots until they are 4½ years old.

The horse is supposed to give 9 years' service, on the average; therefore, each regiment is annually supplied with remount horses to the number of one-ninth of its total strength.

As an instance of the price of horses, it may be mentioned that in 1854, in the province of Pomerania, 733 horses were offered to the sub-commission, 311 of which were purchased; the average price paid was $85, the highest price $137.

Prussia is not now obliged to import horses for the army.

The horses are branded with the initials of the name and the number of the regiment to which they belong, also with the sign of the province where purchased.

The horses are generally good, but by no means extraordinary.

The minimum height of horses for the garde du corps is, 16 hands; for cuirassiers is, 15 hands 2 inches; for light guard and lancers is, 15 hands ½ inch; for dragoons and hussars is, 14 hands $3\frac{6}{10}$ inches.

The minimum height of artillery draught-horses is, 16 hands; for saddle-horses is, 14 hands $3\frac{6}{10}$ inches.

From 2 to 4 spare horses are allowed each squadron.

Every lieutenant of cavalry receives a public horse once in 5 years; if he rides the same horse for that time, it becomes his private property at the expiration of the period, unless he is promoted to a captaincy in the interim.

If he does not avail himself of this privilege for 5 years, he

receives a compensation of from $100 to $110 at the expiration of that time.

If he loses his public horse in time of war, he receives a new one, and is credited for the time he rode the first.

It is the duty of the colonels to see that the officers are properly mounted.

In time of war, or in case of pressing necessity, the laws allow the government to seize the horses of citizens for the use of the army; the owners are paid a price determined by a board of officers.

RATIONS OF THE MEN.

In garrison, bread only is issued in kind, 1½ pounds to the ration; it must have been baked at least 24 hours before issue, and is issued every 4 days. The rest of the food is purchased, by means of a small daily allowance in money, by a commission consisting of the colonel, 1 captain, 1 lieutenant, and 4 sergeants.

The principal food is soup, with a small slice of meat.

No coffee is issued; brandy or wine in lieu of it.

The largest field ration consists of:

½ pound of meat, or ¼ pound of salt pork; 2 pounds of bread, or 1 pound of biscuit; ⅙ pound of rice, or ¼ pound of peeled barley, or ½ pound beans or peas, or ⅓ pound of meal, or 1¼ pounds of potatoes; ½ pint of brandy, and salt.

The bread is generally carried in the forage-sack; the brandy in a flask.

The sketch on page 128 gives the form and dimensions of the kettle carried by each man in the field; it is in a strong leather case, strapped to the left side of the hind fork; the kettle is of stout tin.

A is the cover.

B, the kettle.

C, plan of the bottom.

D, pan, fitting in B.

E and F, section and plan of cover, with rings to serve as handles, and small tin springs to keep it in place; it is carried in the top, (A.)

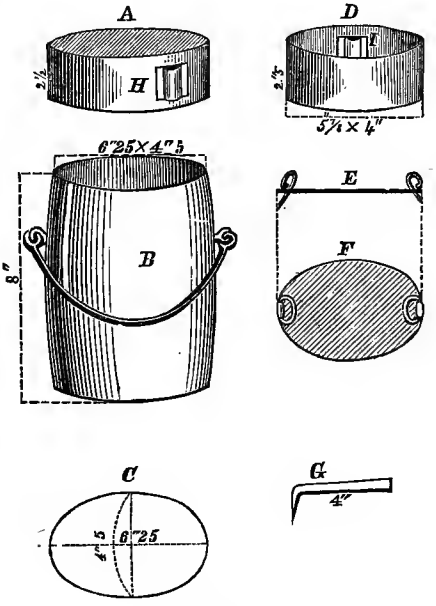
G, handle of top (A) when used as a stew-pan, slipping into the receptacle H; it is 4″ long, and is carried in D, slipping into I.

In garrison, mess-rooms are sometimes provided; each man has a bowl and wooden spoon; the bread is kept in the quarters, each man having a cupboard with a lock and key.

QUARTERS.

In reference to the quarters, it is only necessary to say here that they are usually in separate buildings from the stables.

The horse equipments are kept in the quarters.



FORAGE.

The ration is of two kinds, the heavy and the light; each of these varies according to circumstances, as follows:

Heavy ration,	in garrison.....	9	qts. of oats,	5	pds. of hay,	8	pds. of straw.
	on march, in peace	10½	"	3	"	4	"
	in the field, in war	11¼	"	3	"	4	"
Light ration,	in garrison.....	7½	"	5	"	8	"
	on march, in peace	9	"	3	"	4	"
	in the field, in war	10	"	3	"	4	"

With the consent of the minister of war, the ration as given above may be changed, as follows: the oats may be replaced by rye, barley, biscuit, hay, or straw, at the following rates: for each quart of oats 0.56 quart rye, or 0.8 quart barley, or ⅔

pound biscuit, or 2⅔ pounds hay, or 5⅓ pounds straw; hay may be replaced by straw at the rate of 2 pounds of straw for 1 pound of hay.

The straw, as given above in the garrison ration, is one-half fed, the rest used for litter.

The *heavy ration* is issued to the cavalry of the guard, the horses of the riding-school, the horse artillery of the guard, the draught-horses of all the artillery, and the cuirassier regiments.

The *light ration* is issued to all other horses, except that the lancers receive ¾ quart of oats more than the quantity specified above for the light ration.

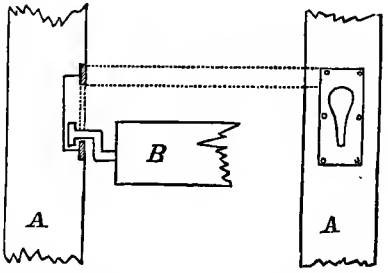
From the day of their purchase until joining their regiments, the remount horses receive from 7½ to 9 quarts of oats, 7 pounds of hay, and 4 pounds of straw per diem.

STABLES.

The new and best stables are of brick, of one story, with a loft above. They have a central passage-way, with a row of stalls on each side, and usually accommodate the horses of an entire regiment.

In some cases, the stables are built on three sides of a rectangle; each of the short sides for 1 squadron; the long side for 2 squadrons, and having a riding-house in the middle; the barracks, detached, form the fourth side. In other cases, the long side is for 1 squadron and the riding-house, while there is a perpendicular wing for each of the other squadrons.

The stalls are 5′ 2″ wide, 9′ 6″ long to the heel-post, 1′ thence to the drain; the central passage-way is 12′ 4″ wide; the ceiling 15′ high. The interior of the stables is plastered, and the communication with the loft is by means of trap-doors in convenient places for throwing down the hay.



The passage-way is paved with cubical blocks of stone; the stalls with bricks set on the long edge.

The stalls are separated by swinging bars suspended by a hook at the head of the stall and by a stem and socket in rear, as shown in the annexed sketch, in which A is the heel-post, B the swinging bar.

For every third stall there is a window 3′ square, the sill being 8′ 6″ above the floor; above the other stalls are ventilators, 10″ square, that can be opened and closed by means of iron rods. The mangers are of cast iron, 2′ long, 11″ wide, 8″ deep; the top 4′ above the floor. They are supported by two iron stanchions under the middle; to the one nearest the horse he is attached by a sliding ring.

Each horse has a separate iron rack, the bottom of which is 2′ above the manger; it is 2′ 6″ long and 18″ deep. The hay is put in from below, after being sorted and cleaned from dust.

There are pumps and vats in the stables.

From 1 to 4 days' forage is kept in the loft, there being forage-magazines close at hand.

A board is nailed across from one heel-post to another, about 7′ above the floor; on this is painted in large figures the number of the stall, and on a black-board as follows:

Private John Smith.—Equipment No. 162.

Name of horse.	Year of remount.	Sex.	Height.	Age.
Ziethen.....	1853	Male.....	4′ 11″	6

The age is that at the time of his joining the regiment, or at the year of remount.

A black-board is hung up in the stable of each squadron, on which are inscribed in chalk, daily, the names of the stable-guard, the number of government horses for duty, the number of officers' horses for duty, the number and names of the sick horses.

At convenient places there are banquette beds for the stable-guard.

Lanterns are swung from the ceiling along the middle of the passage-way.

The horse-hospital and the shoeing-shop are in separate buildings, the former being enclosed by a wall.

In the stable-yard racks are provided for airing the litter.

STABLE-DUTY.

The stable-guard consists of 1 corporal and 8 men per squadron; they are on duty for 24 hours, sleep in the stable, feed the grain, and are responsible for the police and order of the stables

between stable-calls. Two of the number must be on duty and awake day and night.

The stable-guard and the stable-duty generally are under the direction of the squadron officer of the day, the orderly sergeant and the squadron sergeant of the day.

The ration of oats is divided into five equal portions. One of these is given the first thing in the morning; then the horse is cleaned and watered; after this, another portion is given; about noon the horse receives another portion, and is again watered; soon after this he is again rubbed down, and after that receives another portion; a little before dark he is again watered, and receives the last portion.

The straw is generally chopped and fed with the oats, the greater part being given with the last portion.

The hay is fed one-half in the morning, the rest after the last evening feed.

The grain is fed by the stable-guard as follows: a box mounted on wheels contains the feed, and is wheeled along by one man; two others, having dish-shaped baskets, each receive from the corporal the portion for 1 horse, and pour it in the mangers on each side of the passage-way as they proceed. The orderly sergeant and the sergeant of the day superintend.

The men clean out the mangers of their own horses before the feeding.

Each man provides his own horse with hay, which is shaken and freed from dust, sticks, weeds, &c., before being placed in the racks.

At stable-call, each man polices the stall of his own horse. Birch brooms, wooden shovels bound with iron, and light forks are used in policing the stables.

For every 10 horses there are allowed 1 bucket, 1 sieve, 1 shovel, 1 fork, and from 1 to 2 brooms.

The horses are sometimes blanketed in the stables.

FIELD SERVICE.

In the field, the following is the allowance of transportation for a regiment of cavalry:

1 four-horse wagon, containing regimental chest	300	pounds.
Paymaster's and other regimental books	40	"
Adjutant's desk	40	"
Officers' mess-chest	100	"
" portmanteaus (captains 55, lieutenants 45 lbs., each)	1,340	"
Total weight	1,820	"

1 two-horse wagon, containing armorer's tools	220 pounds.
Saddler's tools	110 "
Baggage of the surgeons	100 "
Medicines, &c.	252 "
Total weight	682 "

Each squadron has a two-horse cart, loaded as follows:

Officers' mess-chest	30 pounds.
Farriers' tools	60 "
Spare equipment	173 "
Blankets for sick men	27 "
Baggage, &c., of orderly sergeant	20 "
Baggage, &c., of the medical *personnel*	60 "
Money, when on detachment	50 "
Total weight	420 "

So long a time has elapsed since the Prussian cavalry have seen any serious field service on a large scale, that they have but little more than theory and remote traditions in this regard; it is probable that we have but little to learn from them on this point.

Tents are not used in the Prussian army; the troops being placed in cantonments, huts, or bivouacs.

The huts are of wood or straw, and either square or round: the square huts are 15′ square in the interior, and are for 14 men with their equipment; the round huts are 20′ in diameter, and contain 18 men with their equipment.

The round huts are 36, the square 28, paces apart, from centre to centre.

The huts of each squadron are in two rows, facing each other and perpendicular to the front of the camp; the width of the street varying with the strength of the squadron.

The picket-ropes are stretched 3 paces in front of the lines of huts, and parallel to them; they are attached to picket-pins, driven firmly into the ground, 2 paces apart; 4½ paces in rear of the picket-rope another rope is stretched, parallel to it, to enclose the horses. The baggage is in rear of the colonel's hut; the kitchens 25 paces in rear of the baggage.

The kitchens are ditches 15 paces long, and 2′ deep, one for each squadron.

The latrines are 125 paces in rear of the kitchens; those for the men are ditches 30′ long and 3′ deep, which are renewed every 2 or 3 days in summer.

A regiment of cavalry may bivouac either in line or with the rows of horses perpendicular to the front, or in column by squadrons with half distance.

1. BIVOUAC IN LINE.

Each squadron is allowed a space 75 paces long, by 30 paces deep, with intervals of 4 paces between the squadrons.

The kitchens are 10 paces behind the bivouac of the men; the squadron officers 5 paces in rear of the kitchens; the staff 10 paces in rear of the squadron officers.

The parade-ground is in front of the bivouac, and must be at least 30 paces deep.

A bivouac of this kind occupies a front of 312 paces, and a depth of 80 paces, counting from the bivouac of the front rank to the baggage-wagons, inclusive.

2. BIVOUAC WITH PICKET-ROPES PERPENDICULAR TO THE FRONT.

Each squadron is allowed a front of 50 paces, and a depth of 75, with intervals of 10 paces between the squadrons. The arrangement of the kitchens, &c., is similar to that in the preceding case.

The parade-ground is in front of the camp, and is 50 paces deep.

A bivouac of this kind occupies a front of 230 paces and a depth of 125, between the same points as in the last case.

3. BIVOUAC IN COLUMN BY SQUADRONS.

Each squadron is allowed a front of 75 paces, and a depth of 20, with distances of 10 paces between the squadrons.

The kitchens are 10 paces from one flank of the column, the squadron officers 5 paces beyond the kitchens; the colonel and staff 20 paces behind the last squadron. The parade-ground is on the opposite flank from the kitchens; a free space 50 paces deep is left in front of the bivouac and parade-ground.

This bivouac occupies a front of 165 paces, including the parade-ground, and a depth of 145 paces between the same points as in the last case.

In bivouac the sabres are stuck in the ground 3 paces in front of the picket-ropes; the shako and cartridge-box hung on it.

The horse equipments are placed 3 paces in rear of the horses.

In time of peace, cavalry usually march 14 miles each day, resting every fourth day. In good weather, and over good roads, they may march 28 miles or more; but such long marches are to be avoided, as injurious to the horses and equipment.

On good roads, and in good weather, the march is usually at the rate of 3 miles per hour; in a rough, broken country, about one-third more time must be allowed.

To place a squadron on a railway-train requires about 2 hours; about 1 hour is needed to take them off.

2 locomotives and about 32 wagons are needed to transport a squadron.

SCHOOL OF EQUITATION, AT SCHWEDT.

Lieutenants and non-commissioned officers of cavalry and artillery are sent to this school for instruction in equitation.

The course lasts two years; there is but one class of officers; that is, they all enter and leave the school at the same time, an entirely new set entering every second year; one-half of the non-commissioned officers leave every year.

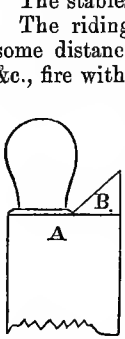
One officer is sent from every brigade of cavalry, and one from every two regiments of artillery. Two non-commissioned officers are sent from every regiment of cavalry and of artillery.

Each officer brings 2 private horses with him, the school furnishing him with a third; the non-commissioned officers come without horses, and take back to their regiments the horse each one rode during the last year.

The school consists of 1 field officer as director, 3 captains, or lieutenants, as instructors, 2 riding-masters, 24 lieutenants and 94 non-commissioned officers as pupils, 1 paymaster, 1 orderly sergeant, 2 veterinaries, 1 quartermaster, 1 horse-breaker, 57 privates as grooms, 27 privates as officers' servants.

The stables and riding-halls are ample, and well arranged.

The riding in the open air is performed on a drill-ground some distance from the town; here they leap ditches, hurdles, &c., fire with the carbine and pistol, run at the heads, &c.



The annexed sketch explains the manner of attaching the head to the post; it avoids the necessity of keeping a man at the post to replace the head. The head is shaped as in the figure, and is partly covered with leather; at A it is secured by a leather thong, so that when struck it moves around that point as a hinge, and is stopped by the triangular piece of wood, B; it thus resumes its first position. They cut at balls on the ground on the right, never on the left.

The pupils are taught to vault on and off the horse at a gallop. Their time is fully occupied by constant exercises during the day.

The usual continental system of employing kickers is followed here; for this purpose two or three horses are taught to kick and plunge in every possible way, when tied up close to two posts; the recruits are mounted on these, without stirrups, and

hold on, if they can, by means of a couple of straps attached to the pommel.

The system pursued in breaking young horses is one of extreme care and gentleness; violent measures are never resorted to; considerable attention is paid to rendering the muscles of the head and neck pliable, in order to gain full control over the horse; this, however, must not be understood as indicating approbation of the Baucher system, which here, as well as elsewhere, has been tried and found to be unfit for cavalry purposes.

THE VETERINARY SCHOOL AT BERLIN.

At this institution about 80 pupils are instructed as farriers and veterinaries for the army, in addition to a number of civilian pupils.

It is very similar to the veterinary school at Vienna, described under the head of the Austrian cavalry; but not quite so extensive, and perhaps not so perfect.

It has lecture and dissecting rooms, operating-halls, museums of comparative anatomy, &c.

The stables accommodate about 80 horses, and are arranged for from 4 to 6 horses in each division.

The interior arrangement of the stables presents nothing peculiar, except that there is but one row of stalls in each. There are boxes, in separate stables, for glandered horses. The Russian steam-bath is used in the establishment, but it is stated that the result is not generally beneficial; it has been applied in cases of rheumatism, colic, &c.

The horseshoeing department is under a special instructor. The shoes and tools present nothing new or worthy of imitation, both being heavy and awkward.

The shoes have no groove, but the nail-holes are countersunk; there are four nails on each side; four sizes of shoes are used in the cavalry.

The method of shoeing is similar to that pursued in Austria,—one man holding the horse, another his leg, a third putting on the shoe.

A vice is made use of in teaching the pupils to set and nail on a shoe; the hoof and pastern of a horse recently deceased are placed in this vice, which is attached to a bench, and so arranged as to admit of being thrown into various positions.

Cows, pigs, dogs, and cats, are treated in this institution. The horses of civilians are cured and shod upon moderate terms, in order to secure the necessary amount of practice for the pupils.

The Prussian military literature is very rich, and is well worthy of study.

Among the works relating to cavalry, which may be consulted with advantage, are—

Kalkstein on the Prussian Army; Die Preussische Armee, nach ihren reglementarischen Formen und Einrichtungen, &c., von R. v. Kalkstein; Mirus' Aide-mémoire; Hülfsbuch beim theoretischen Unterricht des Cavalleristen, von Mirus—this gives the interior service in great detail.

Witzleben on Army Affairs; Heerwesen und Infanteriedienst der Königlich Preussischen Armee, von A. von Witzleben; Buschbeck's Field Pocket-Book; Preussisches Feld-Taschenbuch für Offiziere aller Waffen, von F. Buschbeck; the Hand-Book of Field Service for Cavalry Officers, Handbuch des Felddienstes für Cavallerie-Offiziere, von einem Cavallerie-Offizier.

Schimmel's Partisan Warfare; Compendium des kleinen Krieges, für Infanterie-und Cavallerie-Offiziere, von Friederich Schimmel.

Seidler on Breaking Horses; Seidler, Bearbeitung des Campagne-Pferdes, and Seidler, Dressur difficiler Pferde.

Prof. Hertwig's Works on the Veterinary Science; Praktisches Handbuch der Chirurgie für Thierärzte; Taschenbuch der gesammten Pferdekunde; Praktische Arzneimittellehre für Thierärzte, von Dr. C. H. Hertwig.

All these works are to be found in the library of the War Department.

AUSTRIAN CAVALRY.

ORGANIZATION.

In the Austrian army there are 16 regiments of heavy cavalry—*i.e.* 8 of cuirassiers and 8 of dragoons; and 24 of light cavalry—*i.e.* 12 of hussars and 12 of lancers.

Each regiment of the former consists of 6 active squadrons, the men and horses being chiefly from the German provinces.

Each regiment of light cavalry has 8 active squadrons; the men and horses of the hussars being Hungarian and Transylvanian; those of the lancers are, for the most part, from Poland.

Each regiment has a colonel, one field officer for every two squadrons, an adjutant, paymaster, quartermaster, and judge advocate.

The squadron is the unit for the administration and interior service; the division of 2 squadrons commanded by a field officer is the tactical unit. Each division has a standard.

A squadron of heavy cavalry consists of:

1 captain commanding, called 1st captain.
1 2d captain.
2 licutenants.
2 sub-lieutenants.
2 sergeants.
12 corporals.
1 trumpeter.
1 saddler.
1 veterinary.
162 men and 150 government horses.

A squadron of light cavalry consists of:

1 captain commanding.
1 2d captain.
2 lieutenants.
2 sub-lieutenants.
2 sergeants.
12 corporals.
2 trumpeters.
1 saddler.
1 veterinary.
200 men and 201 government horses.

In addition to the numbers given above, 2 officers' servants are allowed to each squadron.

The general rule is, that about 10 per cent. of the men are dismounted; it is stated by some of their cavalry officers that 20 per cent. would, in time of war, be a better proportion.

The dismounted men remain at the depot, or ride in the wagons; they never use the horses of the other men, and do all the dismounted duty, take care of the led horses, those of the sergeants, &c.

Each regiment has a depot, which, during peace, consists of 30 men; in time of war, it has the same strength as the other squadrons, and supplies men to fill the vacancies which occur. The junior 1st captain of the regiment usually commands the depot, but after 2 years' service with it he may demand to be replaced by a senior 1st captain.

In time of peace, the depot is usually with the head-quarters of the regiment; during war, it is placed at some spot convenient to the line of operations of the regiment. In war, the remount horses are kept with the depot until they can join the service squadrons. During the Hungarian war, there was one instance when there were 1,000 horses with the depot of a regiment of lancers which formed part of the garrison of the besieged place of Temesvar.

TACTICS AND INSTRUCTION.

In order to give an idea of the general tone of the tactics, a few extracts will be given, relating chiefly to the seat and the early instruction of the recruits.

For the cavalry, equitation is of the greatest importance.

It consists not only in the ability to sit the horse, but also in knowing how to conduct and use him under all circumstances.

The object of the cavalry instruction is to accomplish this purpose in the shortest time, and in the simplest manner, suited to the mental and physical qualities of the soldiers.

Therefore, no intricate system of equitation will answer the purpose; although the instruction of the non-commissioned officers may be carried further than that of the privates.

The instruction in the riding-school is intended to give the rider sufficient skill to enable him, by means of the various aids, to control the horse, and cause him to execute all possible movements, and at the same time to give such a position to the upper part of the body and the arms as will cause the rider the least fatigue, and enable him to use his weapons with the greatest effect.

It is an absolute rule that the recruit must never be passed from one lesson to another until he fully comprehends, and can execute well, all that precedes.

Good judgment, tranquillity, patience, and mild treatment, are the most important qualities in an instructor.

The strength of neither horse nor man should be over-taxed.

An experienced and skilful instructor will always go to work with circumspection, and never allow himself to be induced by passion to demand more of man or horse than they are in condition to perform or the end in view requires.

The instruction must progress only according to proficiency; therefore, any practice in the various turns, or in passaging, while the requisite preliminary instruction is wanting, is not only useless, but injurious.

Besides teaching the recruit the ordinary care of his horse, he must also be made familiar with the different parts of his equipment, and be taught how to saddle, pack, and bridle his horse.

In addition, before being taught to ride, he must receive some instruction in the position of the soldier, the facings and marching on foot without weapons, since he acquires thereby a more unconstrained and regular position, which facilitates the instruction in riding.

Finally, there are some exercises on foot which have special reference to the position of the rider. Among these are: To throw back and lower the shoulder-blades by crossing the arms behind the back; turning the wrists with the fingers closed; to stand on an even floor, with the feet parallel and the thighs apart, then to lower and raise the upper part of the body by bending the knees; by this means the necessary flexibility of the knees and the vertical position of the haunches are obtained.

The recruit being on foot, the reins are placed in his hands, and he is taught how to hold them; the use of the legs is explained to him at the same time.

The recruits will also be greatly benefited by being frequently shown a well-broken horse, fully packed, and mounted by a well-drilled soldier. The time bestowed upon these preliminaries will not be thrown away, but will be found to be amply repaid by the increased facility with which the recruit will learn his duty, and the smaller amount of explanation required from the instructor.

Quiet and well-broken horses must always be given to recruits.

Their instruction must never commence without stirrups, but they will ride without stirrups only after they have acquired a firm, sure seat; it is entirely inadmissible for the recruits to ride without stirrups in the lessons with the longe.

All movements will be first taught at a walk; afterwards at the trot and gallop.

The walk must be lively, free, and decided.

The trot must be decided, easy, united, uniform, long, and sure.

The gallop should be calm, united, long, and low.

A good instructor can drill 3 or 4 recruits; but the same instructor should always drill the same men.

The intelligence of the instructor, the progress of the recruits, and the pressure of circumstances, must determine how long each lesson is to be dwelt upon, and when to pass from one lesson to another.

OF THE SEAT.

On horseback, the body has three points of support,—the extremities of the haunch-bones and the end of the spine; therefore, the haunches form the foundation of the seat, and on their direction depends the position of the rider.

When the recruit mounts for the first time, his haunches, thighs, the lower part of the legs, and the upper part of the body, must be placed in position for him.

The haunches must be square on the saddle, and perpendicular to it, so that both haunch-bones may rise alike, and the end of the spine be exactly over the middle of the saddle. If the haunches are leaned too far back, the waist is carried with them, the upper part of the body bent, and the thighs raised; if the haunches are leaned forward, the upper part of the body loses its steady position, requires an effort to preserve its equilibrium, and the thighs are thrown too far back.

The thighs must be so much turned out, and thrown forward with the knees, that they may lie flat on the saddle. The extent to which this may be carried is determined by the prescribed perpendicular position of the haunches; if the thighs are thrown too far forward, the haunches will lean back; and if the thighs are too far back, the body is raised from the saddle. The lower part of the legs, from the knee down, must hang along the sides of the horse quite naturally, and without constraint: they should not be opened out, nor strongly raised or pressed together. The whole surface of the foot must rest on the bottom of the stirrup. The heel must be dropped so as to stretch the muscles of the thigh, but not so much as to stretch the calf of the leg or the ankle-joint; for upon the mobility of the ankle depends, not only keeping the stirrup, but also the falling back of the thigh into its proper place after each step of the horse. Although the

whole inner surface of the thigh must be flat on the saddle, it must not be stiff and constrained.

When the lower part of the leg hangs naturally, the toe is a little turned out.

The foot is thrust into the stirrup as far as the ball of the great toe, and must rest lightly on the bottom of the stirrup. The vertical plane through the centre of gravity of the body must pass through the heels, by which means the rider has more power, and the knees produce more effect.

In riding without stirrups, the thighs must be well extended and the knees lowered, so that the rider may not cling to the horse with the calves, and may have the buttocks firmly on the saddle. The spine should be vertical above the hips. The back of the rider must be elastic, but firm; because this is necessary in using his weapons, and also to break the violence of the blow caused by the motion of the horse, particularly at a trot, and the rider is thus prevented from being tossed up from the saddle, shaken, or strained. A firm back is also necessary to resist the forward motion of the horse; and it is to be borne in mind that the peculiar construction of the joints of the spine admits of a forward motion to a much greater extent than in the opposite direction. Since the rider's hands are in absolute connection with the mouth of the horse, he is pulled forward by a horse heavy on the hand, or bearing on the bit, and finds himself unable to control such an animal unless his back is firm.

In long marches, the fully-armed soldier is, in consequence of fatigue, much inclined to throw the body forward.

These are good reasons for giving great attention to a good, upright, firm, and elastic carriage of the spine.

The shoulders must be sunk, and both blades thrown back, not to such an extent as to stretch the muscles of the breast, but merely to expand it freely; if the shoulders are raised, the breast is contracted, which is injurious to the health.

If one shoulder is lower than the other, the corresponding hip is drawn inward, and *vice versa*. The head must be carried easily on the shoulders, and the chin slightly raised: if the head is thrown too far back, the position of the spine is injured; if it is bent too far forward, the shoulders are rounded, and the rider's field of view contracted.

In the beginning the reins are placed in both hands, each rein passing through the whole hand.

The upper part of the arm, without pressing against the body, hangs near it, naturally, straight, and freely; if the elbow is pressed against the body, the shoulder is raised, and the position of the hand becomes constrained and unnatural; while, if the

elbow is thrown out too far from the body, the hand becomes unsteady.

The forearm is lightly closed on the body, the hands so rounded at the wrists as to bring the thumbs opposite each other, and the little fingers somewhat towards the body; the hands are held, with the fists closed, 4 inches apart, and just above the pommel. The outer hand is a hand's breadth higher than the inner.

To acquire a light, firm hand, the *slight* pressure of the forearm against the body is necessary; for if the recruit endeavors to gain it by a strong pressure of the forearm against the body, he will acquire a stiff, heavy hand.

In sitting the horse the body is divided into two movable parts, and one immovable: the movable parts are from the hips upwards, and from the knees downwards; the immovable part is the thigh, which, to a certain extent, is indivisible from the saddle, and should be as though glued to it.

The legs should hang with the full weight, so that the rider will neither stand on the stirrups, nor close the knees unnaturally, because this closing of the crotch throws up the knees, which fault increases with every motion of the horse, especially at a trot or gallop.

The chief departures from a regular seat are: the *split*, the *forked*, and the *stool* seats.

In the first, the legs and knees are thrown too far back; in the second, they are too nearly vertical; in the third, the hips are too far back, and the knees too far forward.

In the first lessons the recruit must be allowed to take the position which his build renders most convenient, and the instructor must not be rigid in his corrections, but allow the men to acquire confidence.

The shape of the saddle, and the form and gait of the horse, have a decided influence upon the seat; the Hungarian saddle is better than any other for giving an upright and handsome seat, but great care must be taken that the man does not acquire a split or forked seat.

A proper adaptation of man and horse, the discovery, judicious criticism upon, and removal of the causes which prevent the recruit from assuming a good seat, do more to hasten the instruction than loud hallooing and chasing about for hours.

The *walk* is the easiest gait for the rider, and the natural gait of the horse; it should be at the rate of about 120 steps per minute.

The *trot* is the most lasting pace of the horse, but the hardest for the rider; as it does much towards giving a good seat, the

men should be much exercised at it; the common trot is at the rate of about 250, the trot out 300 steps per minute.

The *full gallop* is at the rate of 500 steps per minute; the hand gallop somewhat slower.

The *charge* is at the rate of about 600 steps per minute.

SWIMMING.

Since it is often necessary for light troops to swim their horses, they should be taught beforehand to throw the carbine over the shoulder, to allow the curb-reins to hang loosely, and to guide the horse by the snaffle, not straight across the stream, but a little against the current.

The rider must grasp the mane, and never look at the water, but at the bank, lest he become giddy.

In the event of being swept from the saddle, he can still keep above water by keeping hold of the mane; if he loses this advantage, he must endeavor to seize the horse's tail, and allow the animal to take him ashore.

The figure on page 144 shows the formation of a division of 2 squadrons in line, with the posts of all the officers and non-commissioned officers.

It will be observed that there is no interval between the squadrons, and that the officers, with the exception of the file-closers, are in the front rank. In the different formations in column they retain their places in the ranks. The field officer commanding the division, accompanied by a trumpeter, is usually at a suitable distance in front of the centre, but may move wherever he deems best.

The interval between divisions is 18 paces.

The files are told off by fours, the column by fours being much employed; they also form column by twos, half platoons, platoons, half squadrons, half divisions, and divisions.

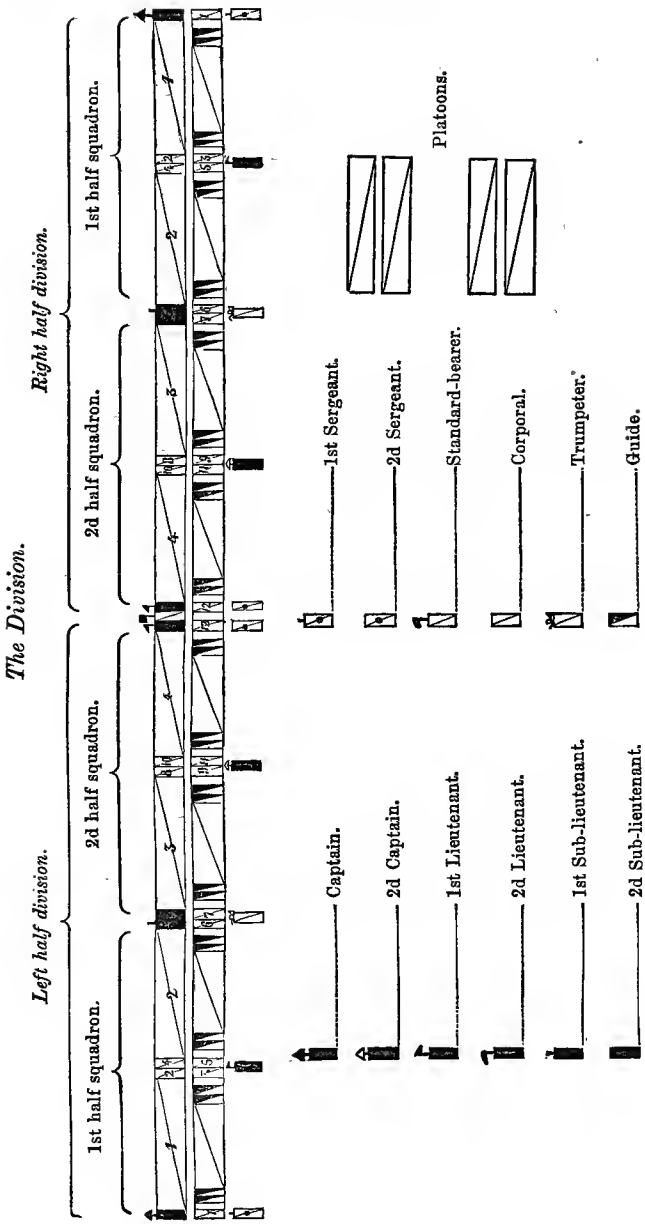
The front of a column of twos, &c., is increased in a manner similar to that pursued in the Russian tactics.

The column by half squadrons, and the column doubled on the centre half squadron, are the usual columns of manœuvre.

Columns are deployed by obliquing at the gallop; in the oblique each man brings his horse's head behind his neighbor's knee.

The order of battle of a regiment of heavy cavalry is a deployed line; the same formation is used when they are exposed to a heavy fire of artillery.

If a regiment of light cavalry forms part of a large body of troops, all four of its divisions are deployed in the order of battle,


The Division.
Left half division.
Right half division.
1st half squadron.
2d half squadron.
2d half squadron.
1st half squadron.
Platoons.
Captain.
2d Captain.
1st Lieutenant.
2d Lieutenant.
1st Sub-lieutenant.
2d Sub-lieutenant.
1st Sergeant.
2d Sergeant.
Standard-bearer.
Corporal.
Trumpeter.
Guide.

or when exposed to a heavy artillery fire; if the regiment is by itself, only three of its divisions compose the line of battle, the 4th being held in reserve, in column, 500 paces in rear of the centre.

A regiment of any kind, if not about to charge at once, or not under the fire of artillery, is formed in line of columns.

It being supposed that heavy cavalry is never out of reach of the support of other troops, the order of battle of a brigade of such cavalry is, with all its divisions deployed in one line.

The order of battle of a brigade of light cavalry is, one regiment with all its divisions deployed in line, the other formed in line of columns, with closed intervals, 500 paces behind the centre of the front line.

Independently of the reserves above mentioned, every body of cavalry which charges detaches, at the moment of taking the trot, a portion of its own force to secure its flanks and rear.

When a single division charges, the flank platoons fall out, and form, in columns by platoons, about 300 paces in rear of the centre; the captains on the flanks close in on the charging platoons; their whole duty is to watch and protect the flanks of the charging body.

When a regiment charges, the flank squadrons act in the same manner, but each squadron remains behind the flank to which it belongs.

In the charge of a brigade of heavy cavalry, the flank divisions fall out, and form in column by half squadrons behind the flanks of the line.

In the manœuvres of large bodies of cavalry, the Austrians form them in one line, throwing in advance the artillery, and a few squadrons, intended to make false attacks, and to clear the way for the main body: their reason for this is, that if the 1st line is broken it is very apt to carry the 2d with it.

DOUBLE COLUMNS.

A regiment of 4 divisions forms double column at full distance on the left half squadron of the 2d division, and the right half squadron of the 3d division, without closing the interval between these divisions; thus the 1st and 2d divisions are each in column left in front, the 3d and 4th right in front.

A brigade forms double column, at half squadron distance, on the left half squadron of the 1st regiment, and the right half squadron of the 2d; the 1st regiment being thus formed in column left in front, the 2d right in front; the interval between the regiments is not closed.

ARMS AND ACCOUTREMENTS.

Hussars.—Sabre, pistol, and carbine.

Lancers.—Lance, sabre, and two pistols; 16 men in each squadron have a carbine in the place of one of the pistols.

Cuirassiers.—Sabre and two pistols; 16 men in each squadron carry a carbine instead of one of the pistols; a metallic helmet and breast-plate, no back-piece.

Dragoons.—Sabre, pistol, and carbine; metallic helmet.

The light-cavalry sabre has a blade about 32 inches long, and not much curved; the scabbard and guard of steel.

It is rather heavy, and not particularly well balanced.

The heavy-cavalry sabre is somewhat longer and straighter.

The lance has a point 8 inches long above the knob; two iron straps extend some 3 feet down the shaft, which is about 9 feet long; the butt tipped with iron; pennon black and yellow; the ordinary lance-sling.

The ordinary carbine and pistol present nothing remarkable; the pistol has no strap to the butt.

The pistol-carbine has been introduced, and will probably supplant the old firearms. It is a long single-barrel pistol, with a carbine-stock, which is attached by two spring catches, so that it may be used either as a pistol or carbine; the stock, when detached, is carried in one of the holsters.

The barrel of this weapon is rifled, with 4 shallow grooves, having $\frac{3}{4}$ of a turn, and is $10\frac{1}{2}$ inches long; it has the same calibre and lock as the new-pattern infantry musket, which does not differ materially from our own last model.

The sabre-belt is a plain leather waist-belt, with two slings, the shorter of which may be lengthened or shortened by means of a buckle; when the man is mounted, the length of this sling is such that the pommel of the sabre hangs about 1 inch below the waist-belt; on foot it is shortened, so that the sabre may not drag upon the ground. The belt fastens with an ∽ hook for the officers, with a buckle for the men.

The carbine-sling is like our own; the pistol, or carbine, rammer is attached to a strap sewed to this sling.

The carbine is always carried on the sling, never being put in a boot nor attached to the saddle.

The cartridge-box is of plain black leather, and slung to an ordinary shoulder-belt; it contains 24 rounds, and has at one end a small compartment for cleaning-utensils.

The sabre-knot is flat, and of leather.

In the field the sabres are first ground, and afterwards whetted every two or three weeks. I was informed that although the

steel scabbard dulls the sabre it is regarded as being, on the whole, better than wood, as not being so liable to injury by fire, kicks, &c.

In time of war the lance-points are kept sharp by filing. The firearms are only used on guard, vedette, &c., to give the alarm, it being taken as a maxim to trust only to the steel. There were several instances during the Hungarian war when the Hungarian hussars stopped to fire; the result invariably was that they were ridden over by the lancers.

Many of the officers think that the sabre should be more curved, as they prefer cutting to pointing.

It is a well-recognized principle that a dull sabre is entirely useless.

When lancers use the sabre, they rest the lance on the left arm.

No pains are spared to perfect the men in the use of their weapons; for they regard this and individual horsemanship as the most important qualifications of the cavalry soldier.

The hussars wear a sabretasche attached to the waist-belt.

HORSE EQUIPMENTS.

The Hungarian saddle is used in most regiments.

The figure on page 148 represents a side view of that saddle.

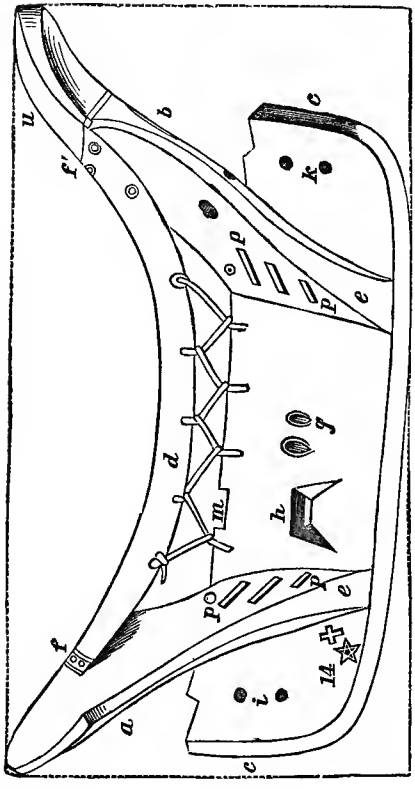
It is of hard wood, entirely uncovered, and consists of the *bars* (*c*), the front fork (*a*), the rear fork (*b*), and the saddle-seat or straining-strap (*d*). The ends of the forks (*e*, *e*) are let into mortises in the bars, and secured by raw-hide thongs passing through mortises (*p*, *p*).

The saddle-seat, or straining-leather, is a stout strap of leather, from 11½ to 13½ inches long, 4½ inches broad at the hind fork, 3½ to 4 in the middle, 2¼ to 3 at the front fork.

It is secured to the front fork by 4 flat-headed nails, a strip of leather being first laid over the end of the strap, as seen at *f*.

As the greatest strain comes upon its junction with the hind fork, it is secured to it differently. At each angle of the strap a stout thong is left when cutting it out; this thong is passed around the neck of the fork, and secured by a nail in rear; 5 flat-headed nails are then driven through the strap into the fork; under the head of each nail a round piece of leather is placed, to prevent the strap from being cut or worn; *f'* shows this arrangement.

The strap is attached to the bars by raw-hide thongs drawn tight, as shown in the figure. The forks are strengthened by light iron plates nailed to the front of the front fork and the rear of the hind fork.



Hungarian Saddle.

The girth is attached to the bars by thongs passing through the holes (*g*). The stirrup-leathers pass through the mortises (*h*) and in the notch (*m*), a groove being cut in the under surface of the bar to receive the leather. The holes (*i*) are for the purpose of attaching the straps which secure the holsters; those at *k* for attaching the crupper. Near the upper end of each fork is a mortise; that in the front fork to receive the cloak-strap, that in the rear fork to receive the valise-strap.

On the front end of the right bar is the name of the horse; on the left bar is the number of the horse, (*e.g.* 14,) and the government brand.

The girth is of leather, 3½ inches broad, and fastens by a large buckle on the left side.

Crupper and breast-strap present nothing unusual.

The blanket generally used is a common white one, folded thrice lengthwise, and four times in the other direction.

A thick felt saddle-cloth, of one thickness, is used in the riding-schools, and is spoken of in the highest terms.

The men sometimes place a straw mat under the blanket.

Four sizes of saddles are issued to the light cavalry; six to the heavy.

The surcingle is of black leather, and is fastened in the Mexican style by a thong and rings.

The stirrups are of steel, with a large, round, flat bottom, and a flat, thin, and deep arch; in winter a little mat of straw is tied to the bottom of the stirrup, to protect the feet against the cold.

One shoe-pouch, of black leather, is carried attached to the right side of the rear fork; it contains 2 shoes and 32 nails; the nails are carried stuck in a species of circular pin-cushion made of plaited straw.

Lance-boot, small, and of leather; one on each stirrup of lancers.

The two holsters are strapped to the saddle; two slits in the schabraque, which may be closed by buckles, allow the pistols to be drawn.

Over the holsters are carried two bags of hair cloth, (called pack-tornisters,) about 1 foot square. In the left-hand bag are carried: razor, soap, shaving-brush, looking-glass in wooden frame, (4½″ × 3″,) hair-comb, beard-comb, wax for the moustache, thread of various colors, case of needles, thimble, white wax, patches of cloth, buttons, pantaloon-straps, spare rowels, button-loops, scissors, a curved and a straight awl, shoemakers' thread and wax, colophony, sight-cover, clothes-brush, linen cap-cover, iron halter-ring with screw, whetstone, tooth-brush, towel,

a pennon, ¼ lb. bread, some oats, and on the outside a forage-cap and tent-pin.

In the right-hand bag are carried: curry-comb, horse-brush, a couple of cloths, a fleam, paring-knife, mane-comb, five brushes for removing the mud, waxing, polishing, coloring, and greasing the boots and horse equipment, (each brush 5″ × 2¼″,) wax of 3 kinds, cork stopper, box of grease, brick-dust, iron-filings, box of chalk, button-stick, brush for cleaning brass, rotten stone, pumice-stone, screw-driver, emery-stick, patches of cloth, white chalk, bran, knife, fork, spoon, salt, herbs, handles of the kettle, and slippers.

These, with a few other articles that it is scarcely worth while to name, form a collection that would do credit to a well-supplied store, but seem to be rather too numerous for the good of the horse.

The valise is of cloth, and is strapped to the cantle; in it are carried: 1 pair of pants, the uniform coat, or spencer, the overalls when not in use, 2 shirts, 2 pairs of drawers, 1 pair of linen cloths for wrapping the feet, 1 pocket handkerchief, 1 pair of gloves.

The schabraque of cloth, with black lamb's-wool seat.

Four men in each platoon carry a hatchet, strapped to the left holster.

The bridle consists of a crown-piece, brow-band, throat-latch, nose-band, 2 cheek-pieces, and 2 pairs of reins; the front is ornamented by diagonal plaited cords, as in the Russian service; the cheek-pieces are single where they buckle to the crown-piece, and are split below, the longer end buckling to the curb-bit, the shorter connecting with the snaffle by a chain and toggle.

Both bits are of steel; there are 3 patterns of curbs, of different degrees of severity; the curb-chain is also of steel.

The reins buckle to ordinary bit-rings.

The halter has a plain headstall, and a rope 6′ long, of the thickness of the little finger; by attaching the snaffle-bit it becomes a watering-bridle.

On the march, the halter is hung on the left side of the pommel.

Two forage-ropes are carried, hung to the cantle.

The forage-sack is a long linen bag, with a longitudinal opening in the middle; when empty, it is carried on the pommel.

On the march, it contains the oats and bread, equally divided between the two ends; in this case it is attached to the rear fork.

The hay is also attached to the rear fork.

The overcoat and stable-frock are on the pommel.

The stable-blanket girth is in the forage-sack.

The camp-kettle is carried on the end of the valise.

The picket-pins for light cavalry are of wood, 16″ long, and 2″ in diameter; there is a small iron ring near the head for attaching the halter-rope; each man carries one strapped to his right holster.

The picket-pins of the heavy cavalry are from 3½′ to 4′ long; the pin is carried in a boot, attached by a long strap to the right holster, the butt end being secured by means of a small strap from the surcingle.

The handle of the curry-comb unscrews.

Bridles are issued to the regiments cut out, but not sewed together.

In bivouac, the schabraque is used to cover the equipment.

The saddle-blanket is used as a horse-cover in bivouac during bad weather, and in garrison in the *daytime* only.

The equipments and arms are kept in the corridors of the quarters.

Officers use the English saddle in the riding-schools, but on parade they must appear with the Hungarian tree, which, for them, is covered with leather.

The spurs are of steel, with short shanks, and are screwed permanently to the heel of the boot.

Martingales are exceptionally used,—for horses that will persist in throwing up the head continually.

The men usually make a spare schabraque out of old blankets: this alone is used at drill; on the march it is placed on top of the other.

The saddle and equipment, packed, weigh 50 pounds.

The men always ride on the curb, passing the snaffle-reins through a loop on the curb-reins, and allowing them to hang loose.

CLOTHING.

The clothing is well made, and of most excellent material.

In the issue of clothing, each article is supposed to be divided into a certain number of portions, and every man is allowed a certain number of portions per annum, which he may draw in whatever articles he pleases. The clothing is issued to the squadron captains either made up, without being trimmed, or merely in the shape of the raw material,—just as they elect.

The system of portions is also pursued with regard to the horse equipment, each captain drawing the number allowed his squadron in whatever articles happen to be required.

The overcoat for all the cavalry is of thick white cloth, with sleeves and a long cape; it is made very long and loose.

It may here be stated that this white cloth, of which the uni-

form coats of the infantry are also made, is stated by the Austrian officers to be excellent for the field; it is cleaned by washing and pipe-clay; and they seem to prefer it to any other color.

The uniform coat is a short, double-breasted frock, with a standing collar, cut away in front; the lancers alone wear epaulettes. This coat is white for the heavy cavalry; dark green for the lancers; light or dark blue for the hussars.

A spencer, of the same color as the coat, is worn by all the cavalry on certain occasions; it has a rolling collar, and is made so loose that it may be worn over the uniform coat.

The men may wear a vest if they please.

The pants are rather scant; those of the hussars fit perfectly tight to the leg, and are worn under the boots; those of the other cavalry are re-enforced with leather as far up as the knee.

For the heavy cavalry the pants are light blue, with a red cord; for the rest of the cavalry they are of the color of the coat.

The hussars wear boots reaching nearly to the knee; the rest of the cavalry wear half-boots. No spare boots are carried on the march.

The stable-frock, neatly made of coarse white linen, serves as a uniform coat in the summer. No linen pants are issued or worn. For service in cold weather, gray cloth overalls are issued; they button all the way up, both on the inside and outside of the legs. On the march, in winter, the men wear the vest, uniform coat, spencer, cloak, pants, and overalls.

Socks are not worn, but are replaced by linen bandages.

Shirts and drawers are issued.

The forage-cap is the same for all the cavalry; it is of a very dark color, and is somewhat of the shape of the French kepis, the visor being more peaked, and the top larger.

The heavy cavalry wear a metallic helmet, with a high crest. The lancers wear the well-known Polish lancer hat. The hussars wear a cylindrical shako, with a peaked visor.

The shoulders being bare, except for the lancers, the distinction of grade is on the collar and cuffs. For officers, it is as follows: a 2d lieutenant has one star, embroidered in gold or silver, on each side of the collar; a 1st lieutenant has two stars; a captain, three; a major has a narrow strip of lace on the cuffs and on the front and upper edges of the collar; also, one star on each side of the collar; a lieutenant-colonel has the same lace, and two stars; a colonel, the same lace, and three stars; a general of brigade has the cuff and collar wholly covered with plain lace, and one star; a general of division, the same lace, and two stars; a full general, the same lace, and three stars; a field-marshal has

the cuff and collar partly covered with waving lace, and has three stars.

A sergeant has three stars on each side of his collar; a corporal has two; a private of the 1st class, one.

On certain occasions the officers wear silk sashes, colored black and yellow.

The stock, for both officers and men, has a flap, like the Russian; the upper edge of the stock is white.

Gloves, or mittens, of cloth, are issued to the men.

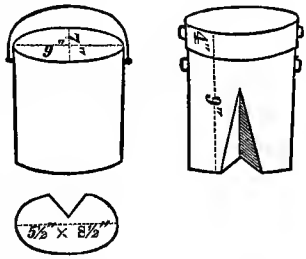
RATIONS.

The food of the Austrian soldier consists chiefly of bread and soup. From 1½ to 2 pounds of bread is the daily ration.

An allowance of from 5 to 10 cents per diem, according to the price of food, is made to each man, to enable him to purchase meat (generally ¼ pound) and vegetables for soup.

In garrison, they have soup but once a day,—about noon; in camp, they also have soup soon after reveille.

In the field, hard bread is generally used. The men generally make their breakfast and supper on a piece of bread and a little glass of brandy purchased at the sutler's.



COOKING-UTENSILS.

Kettles of the annexed shape and dimensions are used by the cavalry in garrison and in the field. The handle of the kettle can be unhooked, and is carried in one of the tornisters; there is also a straight handle for the top, so that it may be used as a frying-pan; this handle, also, is carried in the tornister.

There is one of these kettles for every six men.

It is carried by that man of the mess who has the strongest horse. A linen bag is put over the valise, to keep it clean; then the kettle is put on one end, the cover on the other; a second bag, over the whole, secures the kettle.

Each man has a spoon, and they eat in common out of the kettle, in the field.

In the field, ovens are made of wattling, mud, and straw, as described in Laisnés's Aide-Mémoire du Génie.

HORSES.

The minimum height of the heavy-cavalry horses is 15 hands 1 inch.

The minimum height of the light-cavalry horses is 14 hands 1 inch.

Some of the light-cavalry horses are even below this mark.

Stallions are not used in ranks.

The horses are branded on the left hip with the initials of the emperor, and of the province where purchased; on the left side of the neck, under the mane, is branded the number of the horse. They are purchased by a commission of cavalry officers, and issued to the regiments as required. If the captain objects to receiving a horse, he appeals to the colonel, who decides.

Horses are received at the age of 5 years, as a general rule; they are broken in by old soldiers, under the direction of the 2d captain of the squadron.

If a soldier rides the same horse for 8 years, he receives a gratuity of about $7, and $2.50 for every additional year. If he rides him for 20 years, he becomes the owner of the horse and equipment, and may take him away when he leaves the service.

The horses of the same squadron are not necessarily of the same color.

Lieutenants and 2d captains are allowed one government horse each, and forage for two private horses; above the grade of 2d captain, officers must own their own horses. If an officer allowed a government horse uses him for 8 years, he becomes the property of the officer.

A colonel is allowed forage for 6 horses in peace, for 7 in campaign.

A lieutenant-colonel or major is allowed forage for 5 horses in peace, for 6 in campaign.

A first captain is allowed forage for 4 horses in peace, for 5 in campaign.

A second captain is allowed forage for 3 horses in peace, for 4 in campaign.

A lieutenant is allowed forage for 3 horses in peace, for 3 in campaign.

For a certain proportion of these horses commutation for forage may be drawn, although the officer does not actually possess the horses.

In addition to the allowance of forage, a certain monthly allowance in money is given to assist the officer in keeping on hand the proper number of horses; this allowance is as follows:

For a colonel, about $10.
For a lieutenant-colonel or major, about $8.
For a 1st captain, about $6.50.
For a 2d captain, about $4.
For a lieutenant, about $2.50.

Very few of the horses used in the army come from the government breeding-establishments, these consisting mainly of good stallions, and having for their object the improvement of the breed in the country.

The heavy-cavalry horses are principally from the German provinces; they are of fine appearance, but generally wanting in endurance, being often long-legged and narrow-chested.

The light-cavalry horses are excellent; they are of fine appearance, active, hardy, intelligent, and seldom vicious. They are mostly from Hungary, Transylvania, and Poland. Large numbers are imported from Russia.

The average price of the cuirassier horses is $80.

Do.	do.	dragoon	"	65.
Do.	do.	light-cavalry	"	56.

FORAGE.

The ration of a heavy-cavalry horse is 6 pounds of oats, 10 pounds of hay, 2 pounds of straw; for a light-cavalry horse it is 6 pounds of oats, 8 pounds of hay, 2 pounds of straw.

Five days' rations are carried on the march.

The hay is twisted into a rope, and then coiled into a circle; 2 men are needed to twist it in different directions, first wetting it a little.

In barracks there are 3 equal feeds each day; one at reveille, another at 11½, the last at dark.

The horses are watered 3 times a day.

As a general thing, the horses are not fed during a march.

In the field, sickles are carried.

The ration of straw mentioned above is for the litter.

STABLES, AND STABLE-MANAGEMENT.

The variations in the plan and arrangements of the stables are very great. In some there is a single passage-way, with a row of stalls on one side only; in others, a long hall, with a row of stalls on each side; in another, two halls, with two rows of stalls on each side of each hall.

Some are for 8 horses, others for 16; others, again, for 200.

In some, the mangers are of wood; in others, of wood, lined

with iron; in others, of stone; some of these mangers being continuous, others for a single horse.

The hay-racks are generally of iron; sometimes a rack for each horse, in other cases one long rack for many stalls.

Single stone mangers, and iron racks, seem to be the best.

In Vienna the stalls are floored with plank, the head of the stall being of clay, that the fore-feet may rest upon it; a drain, covered with movable boards, runs along behind each row of stalls.

In Verona there are stalls paved with small, round paving-stones. The passages are sometimes paved with stones, sometimes with wooden blocks.

The roof is supported by pillars. The stalls are separated by swinging bars; in the stables for officers' horses, cushions are suspended from these bars.

There is a shelf over the rear of each stall; a hook, or pin, on each post.

The name of the man to whom the horse belongs is over each stall.

As the quarters are usually over the stables, the racks are filled from below. The stalls are very large; in those of the stables of the 12th lancers, at Vienna, they are 11′ long, and 5′ 4″ wide, with a passage-way of 9′.

During the day the litter is generally laid on racks, under sheds, in the yard; in the stables of the riding-schools, the litter is kept down during the day.

The stables are kept in good order; those of the riding-schools are patterns of neatness.

No equipments are kept in the stables.

The stable-guard consists of 1 non-commissioned officer per squadron, and 2 men per platoon; one of the latter must always be awake.

Whenever any officer in uniform enters a stable, the man on duty at once reports to him the condition of affairs.

In some of the stables the racks for drying the forage are of iron, with sheet-iron roofs over them; these roofs can be turned up when the sun is out.

Attached to one stable was a horse-bath, 5′ deep, 18′ wide, 30′ long at bottom, 61′ long at top, approached by a ramp at each end,—these ramps 15′ 6″ long.

Each man feeds his own horse; he stands at the foot of the stall, and receives from the non-commissioned officer, as he passes down, the portion for his horse. When all the men have received their portions, the non-commissioned officer reports to the officer of the day, at whose command the men place the food

in the manger and rack, and stand by their horses while feeding.

DAILY DUTY IN GARRISON.

In summer and winter, reveille is at from 5 o'clock to 6 o'clock.

At reveille the men put on their pants and stable-frocks, fold up their beds, and go to the stable, one man remaining in every room to police it. They then rub down the horses with straw, remove the litter, water and feed, clean the horse with the brush while he is feeding.

In cleaning, the curry-comb is used only to clean the brush: it is never applied to the horse.

They then return to the quarters, wash, dress, and take their breakfast, which is a piece of bread and a glass of brandy.

At about 8 o'clock there is a drill, or else the horses are taken out for exercise; in any event, the horses are saddled, that the men may have some occupation, and keep the equipment in order. When the drill is over, they unbridle, put on the halter, and loosen the girths, carry the bridle and arms to the quarters, put on the stable-frock, return to the stable, and unsaddle.

They then rub the horses down with straw; carry the saddles to the quarters; clean them, as well as the bridle, arms, &c.

At 11½ is the second feed.

After feeding the horses, the men have their dinner.

The guard and picket saddle up, and get ready for guard-mounting, which is at 12½.

The rest of the men sleep, or do what they please, until 2 o'clock; at which hour the horses are cleaned with the brush.

Until nearly dark the men are then at school, where they are taught the duties of patrols, sentinels, &c., the names of the officers, &c., &c.

About dark they go to the stables, make down the litters, water the horses, take off the blankets, give the last feed, and leave the horses quiet with the stable-guard.

They then return to the quarters, whence they may be absent until 8 o'clock, unless they have a pass for a longer time.

Must be in bed at 9 o'clock. Before going to bed they grease their boots, and stick them in the pants, so as to be ready in case of a sudden alarm. At tattoo and reveille the roll-calls are by platoon.

A picket consisting of an officer and 10 men is always ready for patrol duty; their horses are in a separate stable, saddled, but not bridled.

The sergeants and corporals do not clean their own horses; this is done by the dismounted men.

While we were in Vienna, on the morning of the 9th January, at 6 A.M., the 12th lancers were suddenly alarmed; in 40 minutes the regiment was formed in marching-order, baggage packed, platoons told off, officers at their posts, &c. This was considered sharp work for quarters.

The whole garrison was alarmed at the same moment; this is done, not unfrequently, by the emperor.

QUARTERS.

The quarters are generally over the stables.

The rooms open upon a corridor; about 20 men are in each room.

The sergeants have a separate room; the corporals are with the men of their platoons.

Each man has an iron bedstead, a bed-sack filled with straw, (which is renewed every three months,) a straw pillow, and 2 blankets: these articles of bedding all belong to the barrack, and not to the man; they are under the charge of a barrack-master.

The valise, tornisters, and cleaning-utensils are kept in the quarters.

The clothes are either hung upon pins at the head of the bed, or are on a shelf.

The name of each man is over his bed.

In every room are tables and benches for messing.

The arms and equipments are kept in the corridors, on racks and stands; the carbines are hung on a pin by the guard, muzzles down.

Some of the officers are required to lodge in the barrack; the others have quarters elsewhere, and receive a commutation.

DUTIES OF OFFICERS, ETC.

The 1st captain is responsible for the arms, horses, &c.; he makes returns to the colonel twice each year. He is the only squadron officer who can inflict punishment,—except on detachment, when the detached officer has equal powers. He may confine men for 48 hours in irons; he can inflict 20 lashes; but if he abuses his power the colonel may prohibit him from exercising it.

The 2d captain is in general charge of the 2d half squadron, but is more especially charged with the instruction of recruits and young horses.

Each lieutenant is in charge of a platoon, and is responsible for its order, cleanliness, &c.; he can inflict no punishment; he

forms part of his platoon, and always accompanies it on detachment, drill, &c.

The 1st sergeant has duties similar to those of the same grade in the United States service; he is in charge of the papers, military duties, details, &c.

The 2d sergeant is more particularly under the control of the 2d captain, in charge of the recruits and young horses.

The corporals are divided equally among the platoons, and are in charge of the rooms, guards, &c., &c.

Muster-rolls are sent in by the captain every month; they are checked and countersigned by the paymaster, adjutant, and intendant.

The men are paid every five days.

Regular musters are held only once in each year, and not always so often. They are made by the general of brigade and a military commissary; at these the roll is called, the horses counted, &c.

MARCHES, ETC.

Marches are conducted at the rate of from 3 to 4 miles per hour, (for the most part at a walk,) and usually last about 5 hours.

Over very rough or steep ground the horses are generally led.

The hussars march long distances at the trot, and know no obstacles; rivers, marshes, mountains, and obstructed ground, check their course but little.

About half an hour after starting, a short halt is made, to allow the horses to urinate; only those men dismount whose girths need tightening. At the middle of the march a halt of half an hour is made.

The men are severely punished for not girthing tight.

As already remarked, the men ride on the curb on the march, the snaffle-reins hanging free. The stirrup-leathers are of such a length that, the leg hanging naturally, the bottom of the stirrup shall be 1″ above the spur; with hard-gaited horses the stirrups are somewhat shorter.

No tents are carried in the field; the men hut themselves.

The officers seldom carry any mess-apparatus, but partake of the food of the men.

The following wagons, &c., are allowed in campaign:

For each field officer, 1	5	wagons.
For medicines	1	"
Regimental chest	1	"
In each division, for spare shoes, saddles, &c., 1	4	"
Forge	1	"
Total of wagons for a regiment of 8 squadrons	12	"

Each squadron officer is allowed forage for 1 pack-horse; on this he places a small portmanteau, or pair of hair bags. But these pack-animals are often ordered to be left in depot; and in this case the baggage is put on one of the spare horses.

Each officer's servant usually rides one of his master's spare horses.

The weight carried by a light-cavalry horse in the field is:

Weight of saddle and equipment	50	pounds
5 days' hay (8 pounds for light cavalry)	40	"
5 days' oats (at 6 pounds)	30	"
5 days' bread (at 2 pounds)	10	"
Load of light-cavalry horse	130	"

This is exclusive of the arms, ammunition, and rider.

Before going into action, the men generally manage to throw away the hay, and "bleed" the forage-bags.

SCHOOL OF EQUITATION.

The central cavalry school of equitation is at Vienna. A lieutenant from every regiment of cavalry is sent thither,—40 in all.

Each officer brings a soldier with him to take care of his horses; but this soldier receives no instruction. The practice of instructing non-commissioned officers has been abandoned. The officer brings with him his own "imperial service horse" and that of the soldier.

There are also about 100 horses belonging to the school, with grooms especially for them.

The course of instruction lasts for 2 years; one-half of the officers are changed every year.

The instruction consists of equitation, stable-duty, fencing, and the veterinary art; for the latter they attend the veterinary school.

They ride several hours each day, almost always using the English saddle, and frequently leaping, &c., without stirrups or girths.

They become excellent riders, and manage their horses well.

A good anatomical museum is attached to the school; it contains natural preparations, the Augoux models, plates, &c.

There is also a good fencing-room.

There are two fine riding-halls; one is 238′ by 72′, the other 175′ by 56′.

The floor is a mixture of clay and sand.

The stables are excellent; one, in particular, is probably the finest in the world.

In this connection, it may be well to give the dimensions of the riding-halls and stables of the school for artillery and engineers, now in course of construction at Wiener Neustadt, near Vienna, as they are regarded as models.

The riding-hall is to be 288′ long, 62′ wide, and 27′ high.

The stables are to be for 144 horses; the roof arched, with 2 stalls under each arch. The ventilation and light over the stalls in the roof; the forage and equipment to be kept in rooms over the corridor.

The corridor is 8′ wide; stalls, 12′ × 5′, and 15′ high; mangers, of marble, 3′ × 1′, and 3′ 8″ above the floor; the racks, 5′ 2″ above the floor, and 1′ 6″ high; *bottom* of manger, 2′ from the floor.

Open riding-grounds are attached to every cavalry barrack.

THE VETERINARY SCHOOL.

This is at Vienna. Its chief purpose is to instruct veterinary surgeons for the army.

The full course is of 3 years; for certain purposes, 2 years; for ordinary farriers, merely to learn to shoe the horse, 6 months.

It is much on the principle of that at Berlin, but is more extensive, and better organized.

The collections of natural history and comparative anatomy are most excellent; they embrace not only stuffed specimens of many animals, birds, and fishes, skeletons, bones, jaws, teeth, &c., but also admirable preparations of the muscles of the different parts of the horse, the veins, arteries, &c.,—diseased, as well as sound.

There is a fine collection of instruments for operations on the eye, ear, urinary organs, &c., as well as for amputations, docking, bleeding, &c.

For bleeding in the neck, the spring lancet is used.

A laboratory, lecture-rooms, dissecting-rooms, rooms for the injection of preparations, &c., are attached to the institution.

The apothecary establishment is very complete and well arranged; the number of remedies in the pharmacopœia is *reduced* to 160.

The stables are rooms opening upon a corridor; some of these rooms are for single horses, others for two, four, six, and ten.

They are clean, but hot and badly ventilated.

The animals affected with internal diseases are in different stables from those troubled with external diseases; glandered horses are kept in separate stables.

Glanders is regarded as incurable; they keep the horse long

enough to be certain that he is really afflicted with that disease, and then kill him.

In 1854, two of the students died of glanders; they died in about 8 months after being inoculated, the first symptom being an incurable ulcer on the hand.

They never cauterize for the lampass, but administer purgatives and green food, and bleed by drawing the lancet between the bars.

The forges, tools, and shoes are very rough and clumsy.

Formerly very complicated machinery was used in shoeing the horse, but they have now learned that the very moderate number of 3 men will suffice, without artificial aids: one man, by the assistance of a cavesson and *mesmerism*, holds and controls the horse, another holds his foot, a third puts on the shoe. It is possible that they may learn to dispense with one or two of these assistants, as well as with mesmerism.

The shoe is always fitted and put on cold.

There are usually 6 nails in each shoe.

In summer the shoe is plain, with neither toes nor heels; in winter it has both. For the horses of the officers, in winter, one heel is firmly attached to the shoe, the other can be unscrewed; on leaving the stable, the blunt movable heel is replaced by a pointed one.

The men pay for the shoeing of their horses; a very small daily allowance is given them to cover this expenditure.

The greatest possible attention is paid in the regiments to the condition of the shoes; it is justly regarded as one of the most important points.

At the veterinary school, dogs, cows, sheep, &c., are treated. Sheep are kept here to be inoculated for a disease quite similar in its phenomena to the small-pox; the animal is inoculated upon the bare lower surface of the tail, the matter collected from the pustules and distributed among the great sheep-proprietors of the country.

This disease formerly killed off some 40,000 per annum in the empire; now scarcely one dies of it.

This veterinary school may be regarded as one of the very best in Europe, and is well worthy of imitation.

VETERINARY SURGEONS, ETC.

As has been already stated, each regiment has a senior veterinary surgeon; each squadron a veterinary surgeon.

The first has the rank of a first sergeant, the second that of a corporal.

They are all educated at the veterinary school, and are either the children of veterinaries, or else well-conducted soldiers whose original pursuit was that of a horseshoer.

They generally shoe the horses themselves, as well as treat their diseases; they always instruct three or four good men in the squadron, who act as their assistants.

The pay of a senior veterinary surgeon is about $12 per month; the squadron veterinaries receive about $9 per month.

Both are permitted to practise upon the horses of civilians, on their own account, and also receive a small additional stipend for their services in treating the squadron horses; this last amounts to from $9 to $10 per month.

The horses are shod about once in five weeks.

The evening before a horse is to be shod, he is caused to stand in wet clay; if no clay is to be had, a mixture of dung and mud is substituted, or else the foot is wrapped in rags filled with dung.

The effect of this is to soften the hoof and facilitate the operation of paring and shoeing; it is represented as being attended with the most beneficial effect.

Very little of the hoof and frog is cut away.

The number of medicines used in the regiments is very small. Nadosy's "Equitations-Studien," and Professor Rölls's works, contain the Austrian views of the veterinary art.

GENERAL REMARKS.

The imperfect sketch of the Austrian cavalry given in the preceding pages will show that, as might have been expected, it presents many things well worthy of imitation, and much to be avoided.

The foundation of the efficiency and well-deserved reputation of the Austrian cavalry would seem to be the great perfection of the individual instruction of the men: without this, no organization, however perfect it may be, can lead to good results; with it, the defects of a very bad organization may be overcome or lost sight of.

The system pursued in the purchase of horses is good.

The manner of posting the officers in a division is worthy of the most attentive consideration. There may well occur exceptional cases in which it is absolutely necessary that the officers should be in front of the men to lead and encourage them in desperate situations; but it would seem that the Austrians have good reasons for placing the officers in the ranks. They say that since the officers have, as a general rule, perfect control over

their horses, they will keep them in the proper direction, and thus prevent the men from opening out, the charge being thus rendered compact and effective: they state that this formation results from the experience of actual charges upon an enemy. The general features of their veterinary system might be followed in our service to great advantage.

Their system of depot squadrons is good, and produces good results. The cooking-utensils seem to be well adapted to the end in view. The tactical unit would appear to be entirely too large to permit the great mobility and celerity which are the essential conditions of the success of cavalry; this defect is probably overcome only by the perfection of individual instruction.

The number of things carried by the men, and the excessive weight of the equipment, seem pernicious and absurd in the extreme. I was informed by cavalry officers that the men usually manage to throw away the greater part of their load before many days passed in the field.

The number of non-commissioned officers is too small, in comparison with the number of privates.

The exercises preliminary to the instruction in equitation are worthy of imitation; while it would by no means be advisable to follow blindly all their conditions for a good seat.

The articles of clothing would appear to be altogether too bulky: no doubt the comfort of the man is a very important consideration; but, if that object is gained at the expense of the efficiency of the horse, the result cannot be doubtful.

In conclusion, I would state that much valuable information may be derived from the Cavalry Tactics, Nadosy's "Equitations-Studien," Halfzensir's "Innern Dienst der Cavallerie," and other works; those mentioned are in the possession of the War Department, and should, by all means, be consulted by any officers engaged in the preparation of a revised system for our own cavalry.

FRENCH CAVALRY.

THE French cavalry establishment consists of—

1 squadron of "Cent-Gardes."

6 regiments of the guard.....
- 2 of cuirassiers.
- 1 of dragoons.
- 1 of lancers.
- 1 of chasseurs.
- 1 of guides, (hussars.)
- 1 squadron of gensdarmes.

12 regiments of reserve cavalry.
- 2 of carbineers.
- 10 of cuirassiers.

20 regiments of the line.....
- 12 of dragoons.
- 8 of lancers.

25 regiments of light cavalry.
- 12 of chasseurs.
- 9 of hussars.
- 4 of African chasseurs.

3 regiments of spahis.
9 remount companies.
1 cavalry school, at Saumur.
The mounted gensdarmes.

Each regiment consists of 6 squadrons, with the exception of the African chasseurs, which, during the late war, were increased to 8 squadrons, of which 4 remained in Africa and 4 served in the Crimea.

In time of war, each regiment has a depot squadron.

The duration of service is 7 years.

The regulation height of cavalry soldiers is as follows:

Carbineers.....	minimum,	5′ 10″.4.		
Cuirassiers.....	"	5′ 9″.2.		
Dragoons and lancers.....	"	5′ 8″	maximum,	5′ 10″.4.
Chasseurs and hussars.....	"	5′ 6″.8	"	5′ 8″.8.
African chasseurs.....	"	5′ 6″.8	"	5′ 9″.6.

The following is the composition of a regiment of three squadrons:

	In War.		In Peace.	
	Men.	Horses.	Men.	Horses.
The staff:				
Colonel	1	5	1	3
Lieutenant-colonel	1	4	1	3
Chiefs of squadrons (field officers)	3	12	3	6
Major	1	2	1	2
Captain (instructor)	1	2	1	2
Adjutants (captains)	3	9	3	6
Treasurer (captain)	1	2	1	1
Clothing officer (captain)	1	2	1	1
Assistant treasurer (sub-lieutenant)	1	2	1	1
Standard-bearer (sub-lieutenant)	1	2	1	1
Senior surgeon	1	3	1	1
Assistant surgeon	1	2	1	1
Sub-assistant surgeon	1	1	...	...
Veterinary of the first class	1	1	1	1
Total commissioned staff	18	49	17	29
The non-commissioned staff:				
Adjutants (sergeants)	3	3	3	3
Adjutant, wagon-master (sergeant)	1	1	1	1
Assistant veterinaries	2	2	2	2
Chief trumpeter (sergeant)	1	1	1	1
Trumpeter (corporal)	1	1	1	1
Trumpeters (for the depot squadron)	2	2	...	...
Farriers (for the depot squadron)	3	...	...	...
Total non-commissioned staff	13	10	8	8
Platoon out of ranks:				
First clerk of treasurer (sergeant)	1	...	1	...
Sergeant in charge of clothing-magazine	1	...	1	...
Sergeant in charge of stables	1	...	1	...
Sergeant (fencing-master)	1	...	1	...
Master armorer, master tailor, master boot-maker (sergeants)	3	...	3	...
Master saddler (sergeant)	1	...	1	...
Quartermaster of the staff (sergeant)	1	...	1	...
Second clerk of treasurer (corporal)	1	...	1	...
Provosts (corporals)	2	...	2	...
Saddler (corporal)	1	...	1	...
Tailor and boot-maker (corporals)	2	...	2	...
Major's clerk (private)	1	...	1	...
Carried forward	16	...	16	...

TABLE.—*Continued.*

	IN WAR.		IN PEACE.	
	Men.	Horses.	Men.	Horses.
PLATOON OUT OF RANKS:—*Continued.*				
Brought forward	16	...	16	...
Third clerk of treasurer (private)	1	...	1	...
Second clerk of clothing officer (private).	1	...	1	...
Attached to horse hospital (private)	1	...	1	...
Armorers (privates)	2	...	2	...
Saddlers (privates)	6	...	6	...
Tailors (privates)	14	...	14	...
Boot-makers (privates)	12	...	12	...
Enfant de troupe	1	...	1	...
The number of tailors and boot-makers varies with the effective strength of the regiment.	54	...	54	...
SQUADRON OF CAVALRY OF RESERVE:				
Captain commanding	1	3	1	2
Second captain	1	3	1	2
First lieutenant	1	2	1	1
Second lieutenant	1	2	1	1
Sub-lieutenants	4	8	3	3
Total commissioned officers of a squadron	8	18	7	9
Orderly sergeant	1	1	1	1
Sergeants	8	8	6	6
Quartermaster sergeant	1	1	1	1
Quartermaster corporal	1	1	1	1
Corporals	16	16	12	12
First-class privates	32	32	32	32
Second-class privates, mounted	88	88	69	69
Second-class privates, dismounted	16	...	20	...
Farriers (shoeing-smiths)	3	3	3	2
Trumpeters	4	4	4	4
Under instruction as trumpeters	2	...	...	...
Enfants de troupe	2	...	2	...
Total non-commissioned and privates	174	154	151	128

On the war establishment, each squadron of cavalry of the line has 98 privates of the 2d class, and each squadron of light cavalry has 108.

	IN WAR.		IN PEACE.	
	Men.	Horses.	Men.	Horses.
STRENGTH OF A REGIMENT OF CAVALRY OF RESERVE:				
Commissioned staff	18	49	17	29
Non-commissioned staff	13	10	8	8
Platoon out of ranks	54	.....	54	.....
Squadron officers	48	108	42	54
Non-commissioned officers, privates, &c	1,044	924	906	768
Total	1,177	1,091	1,027	859

INSTRUCTION AND TACTICS.

No change of any importance has been made in the system since it was adopted as the basis of our own; it is therefore unnecessary to remark upon it.

ARMS AND ACCOUTREMENTS.

Carbineers and cuirassiers.—Metallic helmet, back and breast pieces, pistol, and sabre. The sabre has a Montmorency blade, very slightly curved.

Dragoons.—Sabre, pistol, and musket. The sabre is the same as that of the cuirassiers. The musket has no bayonet; barrel, 36″ long, and weighs 7.9 pounds. On ordinary marches, on parade, &c., the musket is carried with the *butt* in a boot, attached to the right side of the pommel; this boot is 5″ deep, 6″ long, and 2¾″ wide. The muzzle of the musket rises about 3″ above and behind the right shoulder, and is attached to the pommel by a strap. When in expectation of meeting an enemy, the musket is slung over the shoulder, muzzle up.

Lancers.—Light-cavalry sabre, pistol, lance, musketoon. It has been proposed to abandon the musketoon: I do not know whether that has been done or not.

Chasseurs.—Dragoon musket, light-cavalry sabre, and pistol.

Hussars.—Musketoon, light-cavalry sabre, and pistol. The musketoon has both boot and sling.

African chasseurs.—Armed as the other chasseurs, but always carry the musket slung over the left shoulder,—never in a boot.

Spahis.—Musket and pistol as for the African chasseurs, but carry the sabre attached to the saddle, in the Mexican fashion.

Cent-Gardes are cuirassiers, armed with a pistol, and a breech-loading carbine, with sabre bayonet: this bayonet is a very long, light, and nearly straight sabre, without guard; alone, it is an excellent sabre; when fixed on the carbine, it may be used, as a lance when mounted; as an ordinary musket and bayonet on foot.

In all the cavalry, the pistol is attached to the saddle by means of a strap fastened to a ring in the butt.

The cartridge-box has a shoulder-belt, and contains 20 rounds; the men carry spare packages of cartridges in their pouches, or wherever may be most convenient.

The belts, &c., are quite like our own; the sabre-belt fastens with an ∽ hook.

A camp-hatchet is carried by the corporals and 1st-class privates.

HORSE EQUIPMENTS.

Our own being at present but little else than modifications of those generally in use in the French service, it is only necessary to describe those of the African chasseurs, and a model very recently adopted.

The saddle of the African chasseurs is a plain wooden tree, with a pad on top, and no skirts; the model not unlike our own, (the Grimsley,) but rather lower in the pommel and cantle.

The girth and surcingle are of leather; stirrups steel; no schabraque. Two shoe-pouches of the usual kind, for 2 shoes and 32 nails each, attached to the hind fork. Nose-bag of hair cloth.

The valise is replaced by canvas saddle-bags, re-enforced with leather. The forage-bag and tente d'abri are fastened to the cantle.

The pistol is in the left pouch; the cloak strapped over the pouches; each man has a hatchet in his right pouch.

A common blanket is placed under the saddle.

The bridle has a single headstall and a Spanish bit, (with a ring around the lower jaw,) the curb-reins attached by swivels, the snaffle-reins to rings on the same bit; the bit buckles to the headstall.

Instead of a halter, a leather collar is used.

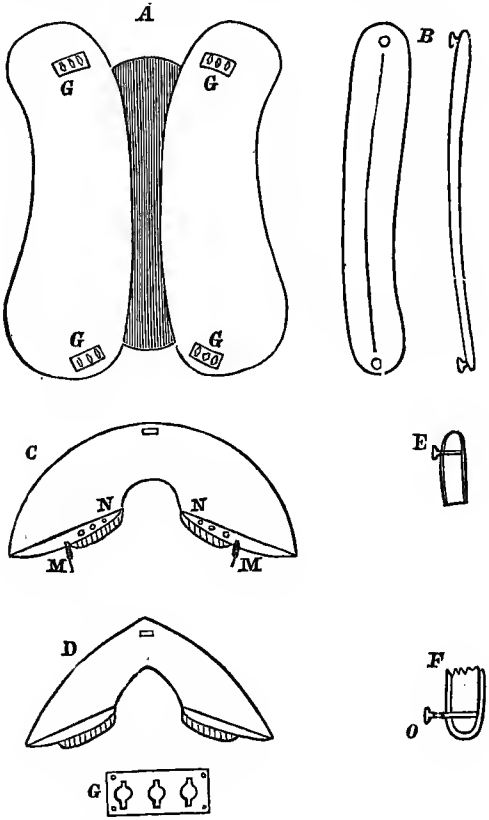
The new saddle is the invention of Captain Cogent, director of the saddle-factory at Saumur.

The tree is cut out of a single piece of white wood, the cantle only being glued on; a piece of walnut, the grain running across the tree, is let into the pommel, and a thin strip veneered upon the front ends of the bars; the pommel and cantle are lower than in the old model; the whole is covered with wet raw hide, glued

on, and sewed at the edges; no iron bolts or fastenings are used.

The staples for the stirrup-leathers are fastened as usual.

The most important feature in this saddle is the manner of arranging it so that a single size may be used for all horses, or for the same horses when their condition changes.



The foregoing sketches will explain the manner in which this is effected. Two strips of cork, about 4″ broad, ½″ thick, and as long as the bars of the saddle, are bent to the shape of the under surface of the bars; to give them this shape, they are

glued to the bars before the tree is covered with hide; they are removed when they have taken a permanent set, trimmed, and covered.

They are covered with thick felt on the side towards the horse's back, and with leather on the side towards the saddle; a longitudinal slit being left in the leather, in order to insert strips of felt, to increase the thickness of the strips when necessary. The strips are attached to the saddle by means of small pins with heads, shown in figs. A, E, and F; these are inserted in the holes in the iron plates G, and run forward into the slots; the pins (O) at the rear end of the strips have each a hole through the neck; the small keys (M) are run through the holes (N) in the rear ends of the bars, and thus keep the strips firmly in position.

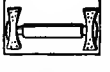
The fig. A represents the under surface of the saddle, with the iron plates (G) let in; the separate fig. G represents one of these plates, with 3 holes and slots to receive the pins of the strips, riveted or screwed to the bars. Figs. B represent a plan and elevation of a strip; fig. E the front end of a strip, with its pins; fig. F the rear end, with a pin having a hole through its neck to receive the key-pin.

Fig. C represents the cantle, N being the holes to receive the keys, and M being the keys secured by a light chain.

Fig. D gives a front view of the saddle.

For a small horse, the pins are placed in the holes nearest the axis of the saddle; for a large horse, in the outside holes; if a horse is narrow in the withers and broad at the loins, the pins are placed in the inside holes in front, and in the outside holes behind, and *vice versa*.

The tree is covered with leather, and has the ordinary skirts. The girth, as adopted, is of black leather, and in two parts.



The upper part is 4″ broad, is screwed to bars, passes over the tree, under the cover, and projects equally on each side below the bars; at each end of this piece is an iron pin with a brass roller, as shown in the annexed figure.

The other portion of the girth is a simple strap, 3″ broad, with a large buckle at one end, and a tongue at the other. The tongue of this strap is passed downwards behind the roller on the near side of the horse, then upwards through the roller on the off side, and buckled on the near side.

Captain Cogent prefers extending the saddle-skirts, attaching the rollers to them, and using the girth just described.

The saddle-blanket (which is also the horse-cover) is of thick felt cloth; it is attached to the pommel by a small strap pass

ing through holes in the blanket, which is thus prevented from slipping back, and at the same time raised so as to keep a free channel for the circulation of air over the horse's spine.

The valise is shaped on a former, hollowed out and covered with stiff leather where it crosses the spine, so that it cannot touch; there are pockets on the ends of the valise for the spare horseshoes and nails.

The pouches are as usual; the holster is of wood, covered with raw hide, and is set inside of the left pouch.

The saddle is not blackened.

The new equipment weighs 15 lbs. less than the old.

I am not positive as to the bridle which has been adopted; that proposed by M. Cogent, and which I think has been accepted, is as follows:

There is a snaffle-bit, with branches; the mouth-piece in three parts.

The curb has a cross-bar, and presents two striking peculiarities:

1st. The curb-chain acts upon the nose, instead of the chin: to accomplish this, a ring is sewed to each side of the nose-band, close in front of the cheek-pieces; the chain, resting on the nose-band, passes through these rings, and then forward to the branches of the bit; the requisite leverage is thus obtained.

2d. The mouth-piece is longer than the interval between the branches, the latter sliding through holes in the mouth-piece; the projection of the mouth-piece beyond the branches has a neck and head; a ring catch at the end of the cheek-piece goes over this neck, and keeps the mouth-piece in its proper position; by raising these ring catches, the mouth-piece is freed and may be slipped down to the bottom of the branches, so that the horse can feed freely.

This arrangement did not strike me so favorably as the Russian: the latter is simpler, and cannot get out of order.

There is in the possession of the War Department a pamphlet of Captain Cogent's, giving the drawings of his bridle and bit.

UNIFORM.

This is so well known in our service that only a few remarks will be necessary.

The frock-coat has not been adopted for the cavalry.

The pants are very loose, and are re-enforced with black leather.

Boots are worn, the spur being permanently attached to the heel

All troops have both a full-dress and a forage cap; the former is often left at home in time of war.

The full-dress cap varies with the corps; the undress is usually the kepis, which has a large straight visor and a loose conical top.

The African chasseurs wear their full-dress cap in the field; it is much like that of our infantry, rather smaller at top, and has no pompon; their undress cap is the *fez*, a close-fitting red felt skull-cap, with a tassel.

It should be remarked that the uniform and equipment of this admirable corps are solely for service: there is no attempt at ornament, and nothing superfluous is allowed.

HORSES.

In France there are 6, in Algiers 3, remount companies, each consisting of 1 captain, 5 lieutenants, and a variable number of men; their duty is the purchase and care of remount horses.

Except at Saumur, there are no *haras*, properly so called; that is to say, there are no breeding-studs to raise colts for the general service. At each remount depot there are stallions of the race most suitable for crossing with the mares of the vicinity; at the proper seasons of the year these are distributed among the villages to cover the mares of the country gratuitously. The proprietors of the colts are under no obligation to offer them for sale to the government, but usually find it their interest to do so.

Horses are purchased at from 4 to 7 years of age, and must be of French origin.

The animal is brought to the commandant of the remount depot, and submitted to his inspection, without any price being named. If the commandant finds him unsuitable, he is at once rejected; if the contrary is the case, he is brought before all the officers of the depot for a thorough examination.

Each officer then writes his estimate of the value of the animal on a slip of paper; these papers are placed in a hat and shaken up, so that the estimate of each officer may not be known; the mean of these estimates is then taken, and the commandant offers that price for the animal.

If the owner accepts the offer, the price is paid at once; if he refuses, the horse is at once sent away, for no bargaining is allowed.

It often happens that the owner receives a larger price than he would have demanded.

This system is stated to work admirably.

The average price is fixed every year by the minister of war; it is usually about as follows:

For horses of the reserve cavalry	$150
" " artillery and cavalry of the line	120
" " light cavalry	100
" " train of artillery, engineers, and baggage	100
For officers' horses	180

The average height is fixed as follows:

Reserve cavalry	15 hands	2″	to	16 hands.		
Artillery and cavalry of the line	15	"	0½″	to	15	" 2″
Light cavalry	14	"	3″	to	15	" 0½″
Trains	14	"	3½″	to	15	" 2″
Pack-horses	14	"	1½″	to	15	" 1″
Mules	13	"	3″	to	15	" 1½″

Officers' horses a trifle larger than those of their men.

The minister of war may authorize the minimum to be reduced ½″, provided the general conformation and qualities of the animal are something remarkable.

The government provides each officer with two horses; if an officer keeps the same animal 7 years, it becomes his private property; he may have an unfit horse exchanged by applying to the inspector-general at the period of the general inspection, provided the inspector decides that the horse is really unfit for service.

Captains and field officers are all allowed 2 government horses, and forage for the regulation number above two.

But little can be said in favor of the appearance of the French cavalry horses; those of the heavy cavalry are either heavy, slow, and awkward, or else are long-legged, and have too much daylight under them; the light-cavalry horses must be better than they look, for they appear unable to do their work, yet they manage to get through with it. The horses at Saumur are generally excellent; and those of the African chasseurs are exceptions to the rule; they are entire Arabians, and are generally very good.

RATIONS OF THE MEN.

The normal ration in the Crimea was:

1 lb. 10¼ ounces of bread, or 1 lb. 3¼ ounces of biscuit; 1.05 ounce of rice or beans; 2.1 ounces of the Chollet prepared vegetables; 8¾ ounces fresh meat or salt beef, or 7 ounces of salt pork; 0.44 pint of wine, or 0.11 pint of brandy.

Coffee and sugar were issued extra, and the other parts of the ration were changed according to circumstances.

In the cavalry the messes consist of 5 men each; each mess having its own cooking-utensils, which the men carry by turns, strapped to the saddle. These utensils consist of the marmite, represented in elevation and plan (p. 176) by fig. A; the gamelle, fig. B; the bidon, shown in elevation and plan of top in fig. D; the frying-pan, fig. C; the small gamelle, fig. E.

The marmite is for making soup; the bidon merely to bring water for cooking-purposes; the gamelle as a dish out of which they eat. Sometimes the small gamelle is substituted for the large one; in this case each man has a small gamelle; fig. E represents 3 small gamelles carried by means of a strap; each small gamelle has a tin cover, which is countersunk, and has a ring as a handle: the cover is attached to the gamelle by a light chain.

The frying-pan is not always issued.

For each mess of 5, one marmite, one bidon, and one large gamelle are habitually provided.

In garrison the cooking and messing are by squadron.

It may be remarked of the French, as of most other continental rations, that they are insufficient, and ought not to be taken as guides in our own service.

The prepared Chollet vegetables are extensively used in the field, and would be admirably adapted for issue in our long prairie marches.

QUARTERS.

These are sometimes in the same building with the stable, sometimes separate.

In the new buildings the horse equipments are kept in the quarters, or else in rooms in the stable-lofts.

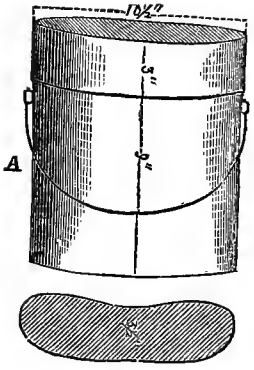
The arrangement and police of the quarters are not generally good, though the officers bestow much care upon the comfort and well-being of the men, rightly regarding that as probably the most essential element to insure efficiency, contentment, and willing obedience.

FORAGE.

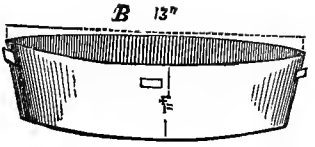
There are three kinds of rations: that in time of peace, that on an ordinary march, and that in the field in war.

The regulation ration in time of war is as follows:

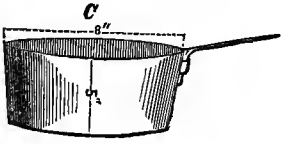
	Hay.	Straw.	Oats.
Carbineers and cuirassiers	15.4 pounds;	8.8 pounds;	8.36 pounds.
Dragoons and lancers....	13.2 "	8.8 "	8.36 "
Chasseurs and hussars....	11 "	8.8 "	8.36 "
Pack-horses.....	15.4 "	8.8 "	8.36 "
Mules.....	11 "	8.8 "	8.36 "



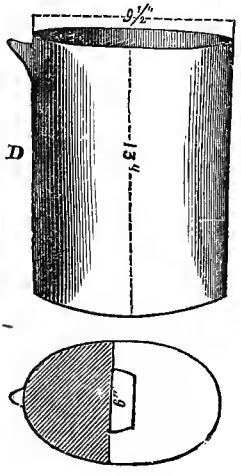
Marmite.



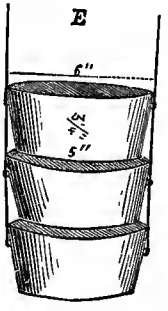
Gamelle.



Frying-pan.



Bidon.



Small Gamelles.

In October, 1855, the ration in the Crimea was: for French horses, 9 pounds hay, 11 pounds barley; for African horses, 6.05 pounds hay, 10 pounds barley.

The largest allowance for French horses during the campaign was: 11 pounds hay, 13.2 pounds barley.

The allowance for African horses, given above, was regarded as too small.

The regulation allowance may be changed as follows: For hay, an equal weight of clover, or double the weight of straw, or half the weight of oats, may be substituted; for straw, half the weight of hay, or one-fourth of oats, may be substituted; for oats, double the weight of hay, four times the weight of straw, 50 per cent. additional weight of bran, or 8 per cent. of barley, may be substituted.

If the horse has no appetite, or the forage is of indifferent quality, the food is sprinkled with salt water.

When it is necessary to feed the horse upon grass, he should be accustomed to it by degrees, giving but a little at first, and increasing the quantity as he becomes habituated to it. For the first few days the full or half ration of grain should be issued.

As a last resort, the following substances may be employed for forage: *malt*, which fattens but does not strengthen the horse, and which renders them liable to disease when they change it for other food, after having become accustomed to it; furze, which is very nutritious, but must be crushed with a hammer or in a mortar, on account of the roughness of its leaves; the pods of the locust; flaxseed; the roots of grass, well washed; the bark of trees; and, finally, even dry wood, cut into shavings.

Running water is given in preference to stagnant. Bad water may be purified by charcoal, hydrochloric and acetic acids. If the water contains leeches, or other similar things, the horses must drink with the nose-bag on.

The water given to the horses ought to be, as nearly as possible, of the same temperature as the air; therefore, in summer it may sometimes be necessary to expose it to the sun, while in winter it should be given immediately after being drawn.

STABLES.

The following are the regulations and arrangements of stables:

As far as possible, the horses of the same squadron should be placed in the same building, divided by partition-walls or staircases into stables of equal capacity.

When windows can be arranged in both long walls, place the horses head to head, separating the two rows of stalls by a longi-

tudinal partition, which should not be more than 1′ higher than the top of the hay-rack, between the pillars which support the roof.

The interior width of a stable for 1 row of stalls is 20′; for 2 rows, it is 40′, when they are head to head; 34′ 8″, when they are tail to tail; height of ceiling, 16′ 8″.

Doors should be pierced in the gable ends, and in the transverse partition-walls, to secure a longitudinal ventilation during the absence of the horses.

The doors for ordinary use should be pierced in the long walls; width, 6′ 8″; height, at least 8′ 8″.

There should be a window, with an area of about 16 square feet, for every 3 stalls; the sill 10′ above the floor; the sash revolving around a horizontal axis at the bottom, and opening by the simplest mechanism; wooden shutters to be provided, if necessary.

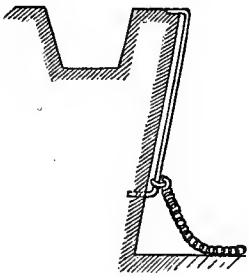
The recesses for the windows should extend to the floor, and be provided with hooks or racks for suspending the horse equipments; in these recesses, openings 3′ 4″ × 2′ 4″ should be made through the wall, for throwing out the litter.

If necessary, ventilators may be cut through the roof in the middle of the passage-ways behind the stalls; ventilators near the floor should be employed only in cases of absolute necessity.

The floor ought to be of hard stones, laid on a firm foundation, and the joints filled with hydraulic mortar, cement, or asphalt; slope of floor of stall, from two to three tenths of an inch in ten inches.

Mangers of wood, stone, or cast iron, placed on a mass of masonry, the front surface of which, as well as that of the manger, has a reversed slope of $\frac{5}{1}$.

The wooden mangers are divided by partitions: those of stone or iron are hollowed out to the length of 2′ for each horse, being solid between the hollows; depth 8″, width at top 1′, at bottom 9″.6; top of manger 3′ 8″ above the floor.



The hay-racks of wood, and continuous, 3′ 4″ high, and placed 5′ 4″ above the floor. The bars round, and capable of turning in their sockets, each bar 1.2″ in diameter, and placed 4″ apart; racks of iron may be authorized.

The system of securing the horse consists of: 1st, a bar of round iron bent at both ends, placed

up and down, parallel to the face of the manger, the upper end secured to the manger, the lower built into the masonry; 2d, a ring sliding on this bar, and having a chain 2′ long, with a T at the free end, attached to it; this T toggles to the halter-ring. The sketch on page 178 shows this arrangement.

Each horse is allowed a width of 4′ 10″, never less than 4′ 8″, so that he may have the allowance of 70 cubic feet, and the space necessary for stable-guards, utensils, &c., may be preserved.

Stables which are less than 29′ wide and 12′ high can be used for two rows of horses only as a temporary arrangement.

Among the French stables of all dates and varieties, one recently completed at Saumur, and the new ones at Lyons, are justly regarded as models of excellence.

Their dimensions and general arrangements are in conformity with the regulations given above: there are, however, some details worthy of notice; that at Saumur, being the most perfect, will be described in preference.

The stalls are 4′ 10″ wide in the clear, and 10′ long to the heel-posts; they are separated by swinging planks, suspended as shown in the sketch on page 180.

The floors are of cubical blocks of stone, laid in cement. A shallow gutter in rear of each row of stalls allows the stale to drain off. The longitudinal partition is of masonry, and about 10′ high. The interior of the stable is plastered; the wood-work painted oak color. In the window-recesses there are racks, on which to hang the horse equipments when saddling and unsaddling.

The equipments are kept in rooms in the loft, where the saddles are placed on horizontal wooden pins, the bridles hung on hooks. The racks are continuous and of wood; the string-pieces, and each bar, are bound with narrow strips of sheet iron.

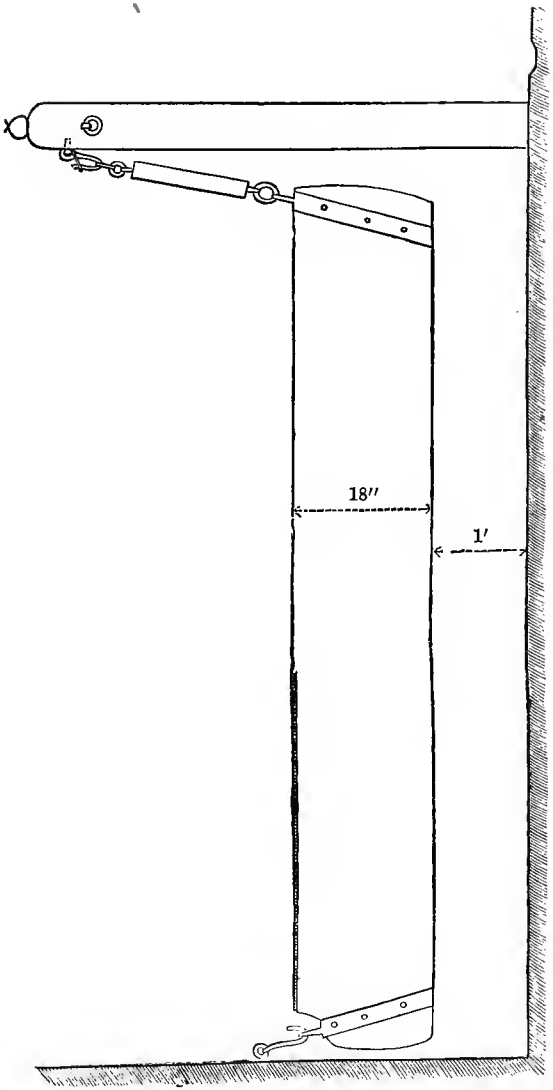
The lower string-piece rests upon iron hooks, let into the wall; the upper one is held firm by iron bars, also let into the wall.

The manger is a continuous mass of stone, with an excavation for each animal; these excavations are 22″ long, 12″ deep, and 12″ wide at top.

The building is divided into apartments, for about 20 horses each, by transverse partitions and stairway-halls; there are large doors in these partitions. In a central hall there are water-tanks.

The openings mentioned in the regulations for removing the litter do not exist.

The halter-bars are arranged as described in the regulations; but there is another ring and chain, above the manger, for use in the daytime.


18″
1′

Forage for 3 or 4 days is kept in the loft, where there are also rooms for a few non-commissioned officers.

In the floor of the loft there are trap-doors, so that hay and straw may be thrown down into the halls below.

The oats run down from the bin, through a wooden pipe, into a large box on wheels.

On the outside of the walls there are rings for attaching the horses while being groomed.

At Lyons, some of the stables had quarters in the second story; this is stated by many officers to be an admirable arrangement, and attended with no inconvenience whatever; there are a few who object to it.

The hospital stables are always separate from the others, and have box stalls.

STABLE-DUTY.

In each squadron, the stable-guard generally consists of a corporal and 1 man for every 20 horses. It is their duty to feed the horses, watch over their safety during the night, and attend to the general police of the stables, being assisted by an additional detail at the hours of stable-call.

About one-half the litter is usually kept down during the day.

The oats is given in two feeds: one-half at morning stable-call, the rest in the evening.

The hay is divided into three equal portions,—at morning, noon, and night; in the forage-magazine it is put up in trusses of 1 ration each, and thus received in the stable-loft; at each feed the stable-guard receive these trusses, and divide each one among three horses.

If straw is fed, it is given either just before or just after the hay,—always in the same order.

The horse is watered twice a day, either just before or after his grain.

The horse is cleaned principally with a *bouchon* of straw and with the brush; the comb is used only to clean the brush.

FIELD SERVICE.

The allowance of transportation in the field is probably less for the African chasseurs than for any other corps; it will, therefore, be given as it was for the 4-squadron regiments in the Crimea:

For each regiment, 1 cart for money, papers, &c.		
For the colonel	1	pack-animal.
For 2 chiefs of squadrons	2	" "
For 2 captains adjutant	2	" "
For 2 surgeons	1	" "
For 2 veterinaries	1	" "
For 2 adjutants (non-commissioned)	1	" "
For 1 treasurer	1	" "
For field officers' mess	1	" "
For medicines and instruments	1	" "
For horse-medicines	1	" "
Total for staff of 4-squadron regiment	12	pack-animals.

In each squadron—

2 captains	2	pack-animals.
4 lieutenants	2	" "
Officers' mess	1	" "
Sergeants' mess, &c	1	" "
Total for each squadron	6	pack-animals.

Recapitulation.

Staff	12	pack-animals.
4 squadrons	24	" "
For ammunition, cacolets, and subsistence	12	" "
Total for a reg't of 4 squadrons...1 cart and	48	pack-animals.

The led horses of the squadrons are used as pack-animals, and counted in the number as given above; officers are not usually permitted to pack their spare riding-horses.

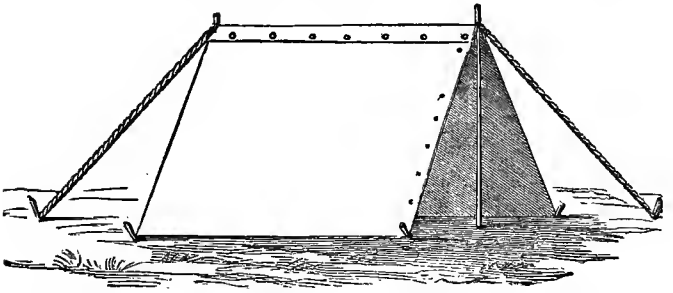
At the commencement of a campaign, each lieutenant of cavalry receives $125 for the purchase of his outfit; a captain receives $250; if a lieutenant is promoted during the campaign, he receives the difference between the two sums.

During a campaign the officers are permitted to draw rations from the commissary department at cost prices, paying their bills monthly.

In the Crimea, the mass of the French troops had no other shelter than the tente d'abri, (shelter-tent;) as late as October, 1855, the African chasseurs, the cuirassiers, some of the other cavalry, and most of the infantry of the line, had only the shelter-

tent; the imperial guard and the artillery were provided with the regulation tent. During the first winter, very few of the troops had more than the shelter-tent. This is composed of pieces of linen 5′ square, having button-holes along one edge, and the buttons along the adjoining edge; each man carries one piece.

The following sketch shows the manner of forming the shelter. The two sticks, each about 4′ long, are stuck in the ground a



little more than 5′ apart; they are connected by a small cord, drawn tight, which is passed around each about 3½′ above the ground; the ends of this cord are attached to pins, as shown in the figure. The two pieces of cloth are then buttoned together, and thrown over the rope between the sticks; their lower edges are secured to small pins: the roof of the shelter is thus complete. Generally 3 men unite to form one shelter; the third man arranges his piece of cloth over the end of the shelter which is most exposed to the weather. If 5 men unite to form a shelter, it is made double the length shown in the sketch.

Sometimes jointed sticks are carried to support the shelter; sometimes stakes are cut on the ground; occasionally the musket is used for the purpose.

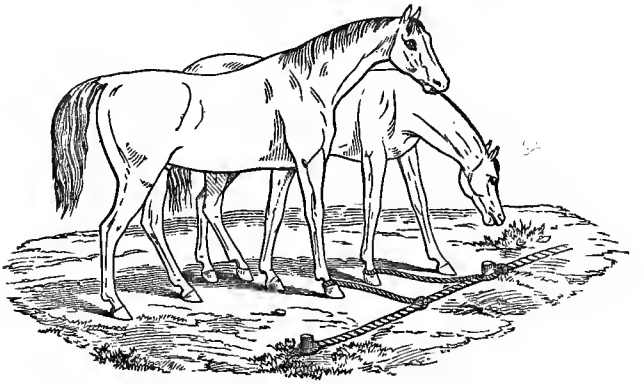
When the camp is somewhat permanent, it is usual to dig a little cellar and bank up the earth outside.

In the Crimea, the cavalry usually encamped in line, with two rows of picket-ropes, and a line of shelter-tents in front of and behind the picket-ropes; the arms and equipments between the shelters and the picket-ropes.

The picket-rope is stretched on the ground, and the horses secured to it by a hobble on the right fore-foot; the hobble is of leather, and about 3′ long; it buckles around the pastern-joint; sometimes the hobble is attached to a picket-pin, instead of a picket-rope.

The following sketch shows this arrangement; it is spoken of by the French officers as being the best manner of securing the horses.

Officers' horses are on the flanks of the squadron picket-ropes; those of the field and staff are near the tents of their owners.



For the latter, rude stables are usually formed, by excavating to the depth of a couple of feet, banking up the earth around three sides, and then forming a roof and walls of brush.

When time and circumstances permitted, the same was done for the horses of the men,—especially in the winter. It was stated that a very slight protection of this kind produced very marked beneficial results. In this connection, I would remark that companies of cavalry ought always to be provided with a sufficient number of tools to enable them to improvise some such shelter in any camp at all permanent: any thing which partially protects the horses from the cold winds is of great service.

The French horses were blanketed in camp.

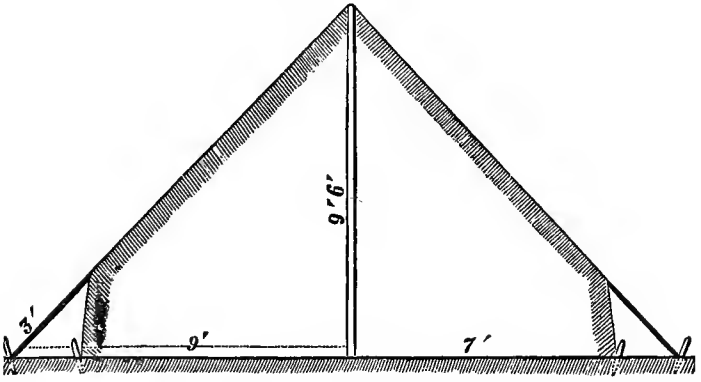
The sketch on page 185 is a section of the conical tent used by the French staff officers; it will be observed that it has low walls, and but one central pole.

In the Crimea, the horses were fed 3 times each day; when the ration was large, 4 times. They were watered twice a day,—early in the morning and at about 3 P.M.; sometimes but once a day.

They were cleaned twice a day.

The men of the African chasseurs never go to bed without

cleaning and rubbing down their horses, whatever may be the weather and the hour of night when they reach camp.



On the march, each man carries 4 days' barley, 2 days' hay, and 4 days' rations for himself.

When going into action, the men, whenever it is possible, leave their forage-rations, cooking-utensils, &c., in charge of a few men, or the dismounted men, retaining only cloak, arms, and ammunition; for a division to effect this requires about half an hour.

There are always a number of dismounted men to take care of baggage-animals, act as officers' servants, &c.

The daily service, manner of performing outpost duty, &c., vary with circumstances, and are regulated in orders by the general of division. For some six months, during the first winter in the Crimea, the horses were kept saddled all day; in the fall of 1855 there was but one squadron on outpost duty on the Tchernaya; the horses of the other squadrons were at their picket-ropes, unsaddled. Of the squadron on duty, one-half was in advance of the Tchernaya, saddled and bridled; it threw out vedettes and pickets; the other half remained in bivouac south of the stream, saddled, but not bridled. The vedettes were always double, and relieved every hour, or two hours,—according to the weather; if any thing occurred, one vedette rode in to inform the picket, the other remaining at his post to watch.

In the African chasseurs, the men being old soldiers, less minute attention to details was required from the officers: for instance, if it was intended to start at 4 in the morning, it was only necessary to announce the fact to the men; the hour for

rising, feeding the horses, breakfasting, &c., need not be specified, but the men can be trusted to be in the saddle at the hour appointed.

In order to arrive at the end of a march sooner, and thus give the horses more time to repose, a part of the march is usually made at the trot, not faster than 5 miles an hour; the horses must be brought to a walk 20 minutes before every halt, and one hour before reaching camp.

In crossing long and steep slopes, the men dismount; but they must not dismount and mount very often.

The march ought not to be greater than from 25 to 31 miles.

Very full instructions as to the manner of conducting marches, and the general duty in the field, are to be found in the French regulations; in practice, these regulations are followed as closely as circumstances will permit.

The cacolets, mentioned when giving the allowance of transportation, are mule-litters; each mule carries two, slung on each side of an ordinary pack-saddle; their frame is of jointed iron, and can be arranged either in the form of a chair for those who are but slightly wounded, or as a couch for more severe cases. They are well worthy of examination for adoption in our own service, in cases where commands move without wagons.

TRANSPORTATION OF MEN AND HORSES BY SEA.

The American vessels, the Great Republic and the Monarch of the Seas, were fitted up at Marseilles by the French government as horse-transports, and present good examples of the system pursued; the arrangements were the same in both.

The Great Republic is 317′ by 53′ over all, 30′ hold, tonnage 3,424; she has carried 497 horses and 500 men at the same time; 240 horses on each "between-decks," the rest on the spar-deck.

A donkey engine, of 8-horse power and 12″ stroke, was employed to hoist the horses in and out; a load of horses taken in, or discharged, at the rate of 1 horse per minute.

In one voyage, of 21 days, out of 497 animals, 9 horses and 4 mules were lost; most of these were sick when brought on board, and suffered much from the heat at Malta.

Three additional ventilating-ports were cut on each side of each deck; three weeks were occupied in putting up the stalls.

The Monarch of the Seas is of 2,360 tons burden.

She carries 300 horses, or 950 soldiers and 28 officers; loads

and discharges, by means of a donkey engine of 8-horse power, at the same rate as the Great Republic. The cost of putting up the stalls was about $8,000. On one voyage she lost about 20 horses out of 300. Out of 3,000 horses, carried at different times, she lost about 30 in all.

In all the transports the government furnished the forage; the ships fed the men under a contract.

The loading was under the direction of government employés; the captain of the vessel regulated the extinction of lights, &c.

It is considered best to transport horses on board of large sailing-vessels, towed by steamers, thus avoiding the heat of the engine, &c.

The lower deck is regarded as best for the horses.

The horses are cleaned once a day; fed and watered twice: these details are regulated by the officers of the troops.

The horse equipments, &c., are placed at the ends of the decks.

Horse medicines were brought on board by the veterinaries on duty with the troops.

When the vessel is "end on" to the wharf, a bridge of decked flat-boats is made from the shore, and the horses walked alongside; the slings are then put on, and the animals hoisted in, with the saddle and entire equipment on them.

The sling used on board ship does not differ materially from that employed in the English service; when used for hoisting in and out, a breeching and breast-strap are employed.

On the voyage the sling is used only in bad weather, when the horses become fatigued.

The sea-halters are of rope, with two halter-ropes.

The sketches on page 188 give the form and dimensions of the stalls.

The breast and tail boards are nailed to the stanchions, and are 3″ thick; the side-boards slip in grooves. The heads of the horses are towards the middle of the ship.

The stalls are 28″ wide, and 5′ 10″ long in the clear between the pads.

The pads are of canvas, stuffed with hair; they were too thin.

The feed-troughs of wood, and hung to hooks on the front of the breast-board: they are 22″ long, 7″ deep, 10½″ wide at top, 7½″ wide at bottom,—all these dimensions in the clear; the edges covered with sheet zinc. For each sling there are two sling bolts and rings, attached to planks spiked to the joists.

To each halter-ring two halter-ropes, of adjacent horses, are attached. The flooring of the stalls is of inch boards, resting flat on the deck; long cleats in front and rear, as shown in the

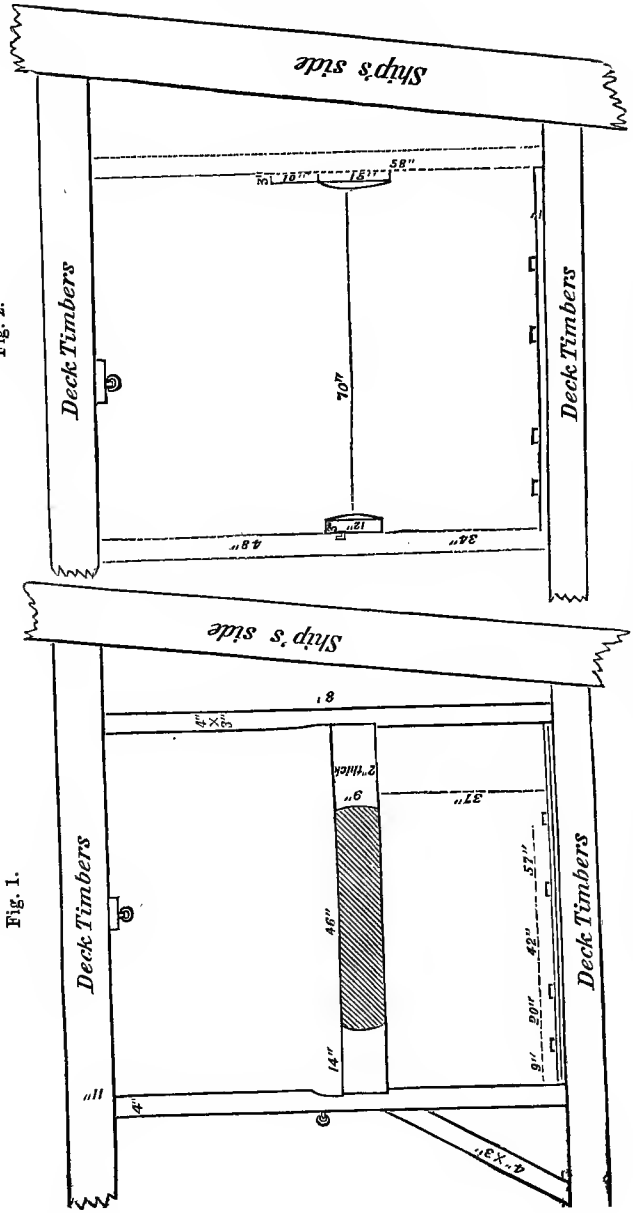


Fig. 1 represents the elevation of a stall, showing the stanchions and side-boards.
Fig. 2 represents a section through the axis of a stall, and shows the breast and tail boards.

figures, and cross-cleats, parallel to the length of the stall, under each side-board, are nailed to the floor: this flooring cannot be taken up while the horses are on board.

The stale passes out through the scuppers as best it can. The hatches are always kept open.

It will be seen that the arrangement of the stalls is such that a single horse cannot be removed from the middle of a row without first removing all the others between him and one end, or else sawing off the breast board; this and the arrangement of the flooring are objectionable.

It will be seen hereafter that these defects are obviated in the English system, which will be described in its proper place, and which may safely be taken as a model.

When horses are carried on the spar-deck, they are placed in movable box stalls.

The men sleep about the decks, as they best can, in their overcoats; blankets are sometimes given them,—especially if they are sick. Neither bunks nor hammocks are provided. The rations of the men on board ship are as follows:—

Breakfast, $6\frac{1}{2}$ ounces of bread, $\frac{1}{10}$ pint of brandy or rum, $\frac{7}{10}$ ounce of coffee, $\frac{9}{10}$ ounce of sugar.

Dinner, $6\frac{1}{2}$ ounces of bread, $\frac{4}{10}$ pint of wine, either $8\frac{3}{4}$ ounces of salt beef or $7\frac{9}{10}$ ounces of pork, $2\frac{1}{10}$ ounces of potatoes, peas, or beans, or 1 ounce of rice, or $4\frac{2}{10}$ ounces of cheese.

Supper, $6\frac{1}{2}$ ounces of bread, $\frac{4}{10}$ pint of wine, $4\frac{2}{10}$ ounces of Chollet vegetables, or 2 ounces of rice.

VETERINARY SCHOOLS.

Of these there are three: one at Alfort, near Paris, one at Lyons, one at Toulouse,—all under the minister of agriculture, commerce, and public works. At Alfort there are 40 pupils, sent by the war department, who supply about 40 veterinaries per annum for the army; as this number is insufficient, the graduates from civil life frequently receive appointments.

These institutions are all conducted on the same principles: that at Alfort, however, is the most extensive, and probably the best; a description of that at Lyons will give a sufficiently accurate idea of the general nature of all.

At this there are 150 pupils, admitted between the ages of 17 and 25, and paying $80 per annum.

They are required to pass a preliminary examination, at which they must show that they can forge a shoe in two heats, that they understand the French grammar, and can write, know arithmetic and the elements of geometry, and have a general

knowledge of the geography of Europe, as well as a special acquaintance with that of France.

The pupils are divided into 4 classes, the course being of four years. For the two junior classes the course is purely theoretical, and they are required to study 8 hours a day; in the two senior classes it is partly practical, their presence in the study-rooms being required but 4 hours per day.

The members of the two senior classes have, each, one or more sick horses assigned to their care, to which they administer the requisite medical treatment, under the supervision and according to the prescriptions of the professors. There is a clinique, or dispensary, whither sick horses are brought every day, the professors prescribing and making remarks upon the cases; each pupil has a book in which he records the prescriptions, remarks, and whole history of the cases; he retains this book when he leaves the school.

During the whole course the pupils are required to make shoes and to shoe horses.

The academic staff is as follows:

1. The director, who is also professor of anatomy and external diseases.
2. A professor of external pathology, surgery, and shoeing.
3. A professor of internal pathology, and botany.
4. A professor of hygiene, physiology, and sanitary police.
5. A professor of physics, chemistry, and pharmacy.

In addition there are three assistant professors.

The pupils reside in the establishment, and are kept under very strict discipline. When they pass their final examination they receive a regular diploma as veterinary physicians.

In the practice at this institution, the glanders is regarded as incurable, and the fleam is preferred to the spring lancet.

The boxes for very sick or large horses are 11′ 4″ wide, 14′ 9″ long, with a passage-way of 5′ in rear, and are about 15′ high; in front of the stables there is an iron shed 10′ 6″ wide.

The mangers are of stone; racks, of wood; floors, of hard brick, laid on the long edge; the divisions between the stalls are solid, and swing on pivots, so as to yield to the kick of the animal.

There are stables for cows; kennels for dogs, cats, &c.

There are also dissecting-rooms,—animals being purchased and killed for the purpose.

The library has a reading-room attached, and contains general scientific works, as well as those relating especially to the veterinary art.

The collection of instruments for experiments in natural philosophy is fair.

There is a small anatomical museum, in which are found nearly all the admirable models made by Dr. Augoux; these represent the teeth, bones, intestines,—in fact, all parts,—of the horse, as well as complete models showing the whole external and internal structure of the animal. They are made of a material not unlike papier-maché, and are durable and accurate.

These models are in general use throughout Europe, and are regarded as indispensable in a veterinary school.

Specimens were placed in the War Department; and I would urgently recommend that complete sets be procured for the military academy, the cavalry depot, and for general use in the service.

In the botanical garden are found specimens of all proper and noxious aliments for the horse, medicinal plants, &c.

The forges in the shoeing-shop are of iron, and well arranged; the tools present nothing peculiar.

The method of cold-shoeing is pursued here, as is universally the case in the French government establishments. This process will be fully explained when describing the farrier school at Saumur.

CAVALRY SCHOOL AT SAUMUR.

This is the most perfect and extensive institution of the kind in Europe,—perhaps the only one really deserving the title, the others being more properly mere schools of equitation.

It is situated on the Loire, in the department of the Maine and Loire, a region in which forage abounds, and where the climate is such that exercises in the open air are seldom interrupted.

The organization and purposes of the school cannot be better described than by giving extracts from the "Decree of Reorganization," dated October, 1853:

"The purpose of the cavalry school is to form instructors, intended to diffuse through the corps a uniform system of instruction in every thing relating to the principles of equitation, and other branches of knowledge appropriate to the cavalry arm.

TITLE I.

OBJECT OF THE SCHOOL AND DIVISION OF INSTRUCTION.

ARTICLE I. The instruction at the cavalry school is entirely military, and is based upon the laws and regulations in force with regard to the mounted troops. It includes—

1st. The regulations for interior service.

2d. The cavalry tactics.

3d. The regulations for garrison service.

4th. The regulations for field service applied, as far as possible, on the ground, especially with regard to reconnoissances.

5th. A military and didactic course of equitation, comprising all the theoretical and practical knowledge required for the proper and useful employment of the horse, his breaking, application to the purposes of war, and various civil exercises.

6th. A course of hippology, having for its object practical instruction, by means of the model breeding-stud attached to the school, in the principles which should serve as rules in crossing breeds and in raising colts, to explain the phases of dentition, to point out the conformation of the colt which indicates that he will become a good and solid horse, the method to be pursued to bring the colt under subjection without resistance, and, finally, to familiarize the officers and pupils with all the knowledge indispensable to an officer charged with the purchase and care of remount horses. This course will also include notions concerning the horse equipment, which will be derived from an examination of the saddle-factory connected with the school.

7th. Vaulting, fencing, and swimming.

ARTICLE 2. The number of horses is fixed by the minister of war, according to the wants of the service; the number of troop-horses is fixed by table A, appended to this decree.

The number of young horses, for breaking, is fixed at 100 as a minimum. These last horses, as soon as their education is complete, are sold or given, according to the orders of the minister of war, to those officers who need a remount,—in preference, to officers of the general staff and staff corps, those of the artillery, and mounted officers of infantry.

These officers may also select from among the other horses of the school, with the approval of the commandant of the school.

ARTICLE 3. The pupils at the school are:

1st. Officers for instruction.

2d. Sergeants for instruction.

3d. Corporals for instruction.

ARTICLE 4. The full number of the divisions of officers, sergeants, and corporals for instruction is as follows:

Officers for instruction,	2	divisions	(effective)	....	100
Sergeants "	1	"	"	....	40
Corporals "	4	"	"	....	240

ARTICLE 5. The pupils are sent to the school by order of the

minister of war. They continue to be counted in their corps, from which they are considered detached during their stay at the school. They receive additional pay.

TITLE II.

COURSE OF INSTRUCTION.

ARTICLE 6. The courses of instruction are divided into 2 years. Upon their admission, the pupils take up the first year's course; when they have passed the examination at the close of that year, they enter upon the course of the 2d and final year.

ARTICLE 7. In case of interruption from sickness, pupils may repeat one year's course. No one can remain more than 3 years at the school.

ARTICLE 8. A council of instruction is charged with the direction of the studies. They propose useful changes, and direct the progress of the studies. They are charged with the examinations.

TITLE III.

THE DIVISIONS FOR INSTRUCTION.

SECTION 1.

Officers and sergeants for instruction.

ARTICLE 9. The officers for instruction are selected from the regiments of cavalry and artillery, as well as from the squadrons of the trains of the parks and military equipages. Every year the inspectors-general designate the lieutenants and sub-lieutenants who can profitably follow the course at the school. The lieutenants selected must not be more than 36 years of age, the sub-lieutenants not more than 34.

The sub-lieutenants, who are graduates of the special military school, must have served at least 2 years with their regiments before being sent to the cavalry school.

ARTICLE 10. The sergeants for instruction are selected from the artillery. Every two years the inspector-general designates sergeants of the regiments of artillery and the squadrons of the park-trains to be detached from their corps as sergeants for instruction.

ARTICLE 11. The officers and sergeants sent to the school for instruction take their horses with them, and use them in the military exercises.

ARTICLE 12. Those who, after six months' trial at the school, are found to be deficient in the necessary qualities, are sent back to their regiments.

ARTICLE 13. Upon the recommendation of the inspector-general of the school, the officers serving there as pupils compete for promotion by choice with the officers of the corps from which they are detached.

ARTICLE 14. The cavalry lieutenant for instruction who graduates first in his class is presented for the first vacancy as captain instructor that occurs in the cavalry, provided he has the seniority in his grade demanded by the law.

The cavalry lieutenant who graduates second obtains, under the same conditions, the 2d vacancy of captain instructor, provided the division to which he belonged consisted of more than 30 members. The sub-lieutenant for instruction who graduates first of his grade, provided he is not lower than 10th in the general classification of the officers of both grades, is presented for promotion to the first vacant lieutenancy that occurs in his regiment.

ARTICLE 15. Those who remain 3 years at the school are not entitled to the benefits of the preceding article.

SECTION 2.

Corporals for instruction.

ARTICLE 16. They are designated every year, by the inspectors-general, in the regiments of cavalry and the squadrons of military equipages, from among those who have the greatest aptness for equitation, and are most deserving on account of their conduct, instruction, zeal, and intelligence; those who are recommended for promotion in their corps are selected in preference.

They must not be more than 25 years old.

They are sent to the school, by order of the minister of war, on the 1st of April of each year.

They remain connected with their corps, from which they are regarded as detached, and leave their horses there.

ARTICLE 17. The corporals compose 2 squadrons, commanded by captains on the staff of the school, who have officers for instruction under their orders.

ARTICLE 18. The corporals for instruction, although acting in the ranks, continue to wear the distinctive marks of their grade, and receive the pay of corporals of cuirassiers.

ARTICLE 19. Those corporals who, after spending 6 months at the school, do not evince the necessary qualifications, are sent back to their regiments.

ARTICLE 20. When they have passed their final examination,

the corporals for instruction are promoted to be sergeants, vacancies having been reserved for them in their own regiments, to which they consequently return.

Those who at the examination at the close of the first year are in the highest third part of their class, and have distinguished themselves by their zeal and good conduct, may be at once promoted to be sergeants in their regiments, and perform the duties of that grade in the squadrons of the school; they receive the pay and wear the distinctive marks of their new grade.

Those corporals whose final examination is not satisfactory will be sent back to their regiments as corporals, unless they are especially authorized to spend an additional six months, or a year, at the school.

ARTICLE 21. The corporals who graduate among the first ten of their class are placed on the list of sergeants for promotion as sub-lieutenants as soon as they have completed the two years' service as sergeants required by law.

TITLE IV.

STAFF OF THE SCHOOL.

SECTION 1.

Composition of the staff.

ARTICLE 22. The staff of the school is composed as follows:

1 general officer, as commandant.
1 colonel, as 2d commandant.
1 lieutenant-colonel.
1 chief of squadrons.
1 major.
10 captains, instructors,
- of whom 3 command the squadrons.
- 2 perform the duty of captain adjutant.
- 2 in charge of the instruction of the officers.
- 1 in charge of the special course of the sergeants.
- 1 as assistant to the chief riding-master in the school for breaking young horses.
- 1 supernumerary to supply vacancies.

1 captain, treasurer.
1 captain of clothing.
1 director of the saddlery, either a captain or lieutenant.

1 assistant treasurer, either a lieutenant or sub-lieutenant.
1 standard-bearer, either a lieutenant or sub-lieutenant.
1 veterinary of the 1st or 2d class.
1 assistant veterinary of the 1st or 2d class.
4 non-commissioned adjutants, { 3 for duty with the squadrons. 1 wagon-master, also in charge of library.
5 first sergeants, { 3 for duty with the squadrons. 1 master farrier. 1 master saddler.
13 sergeants, one of whom is fencing-master.
4 quartermaster-sergeants, one of whom is attached to the saddlery.
1 corporal, trumpeter.
2 corporals, farriers.
2 corporals, saddlers.
3 corporals, provosts.

ARTICLE 23. The employés in the riding-halls, academy, and model stud, are military or civil; their rank and precedence are as follows:

1 chief riding-master, ranks as chief of squadrons.
5 riding-masters, who rank as captains; one of these may be the director of the stud, and professor of hippology.
3 assistant riding-masters, who rank as lieutenants or sub-lieutenants.
1 master of the riding-halls, ranks as non-commissioned adjutant.
4 assistant masters of the riding-halls, 1 of whom ranks as first sergeant, the others as sergeants.

The direction of the breeding-stud, and the course of hippology, may be intrusted to a civil or military professor other than a riding-master, or to a military veterinary.

ARTICLE 24. The medical staff is as follows:

1 chief surgeon.
1 surgeon of the 1st or 2d class.
1 assistant surgeon of the 1st or 2d class.
1 chief apothecary, or assistant apothecary.
1 hospital intendant.
3 principal hospital attendants.
7 hospital attendants.

ARTICLE 25. There are attached to the school—

1 sergeant, as master armorer.
1 sergeant, as master saddler.
1 sergeant, as master tailor.
1 sergeant, as master boot-maker.

ARTICLE 26. The officers composing the staff are authorized to have the number of horses allowed their grade, with the exception of the intendants and medical officers, who are only authorized to have their government horses.

ARTICLE 27. Upon the recommendation of the council of administration, the minister of war determines the number and duties of the administrative employés attached to the school; also the number of subordinate agents.

For additional information I would refer to the copy of the decree of reorganization in possession of the War Department.

The captains-instructor of the cavalry regiments, and the instructors of equitation in the artillery regiments, are mostly selected from the graduates of this institution.

In addition to the subjects mentioned in the decree, the non-commissioned officers are instructed in the theory of administration and accountability.

The text-books are as follows: The Hippology of M. St. Ange; the Equitation of M. d'Aure; the Tactics and Regulations.

The recitations are by sections of about 30 in each.

In reciting upon the general principles of tactics, equitation, hippology, &c., the manner is as at our Military Academy; when reciting upon the movements in tactics, all the commands and explanations of the instructor to the troops are repeated "verbatim et literatim," and in the tone and pitch of voice used in the field.

Perfect uniformity of tone and manner is required, and thus obtained; the object of reciting in this manner is to teach the pupils the proper tone and pitch of voice, to accustom them to hear their own voices, and to enable them to repeat the text literally at this pitch of voice, without hesitation or mistake.

The course of hippology includes the structure of the horse, the circulation of the blood, organs of respiration, &c., food, working-powers, action, breeds, manner of taking care of him, ordinary ailments and remedies, shoeing, lameness, saddling, sore backs, sanitary police, &c., but does not comprise a complete veterinary course.

The Augoux models are employed, in preference, for demonstrations, and are considered invaluable.

The officers on the staff of the school, and those for instruction, lodge in the town; the non-commissioned officers are quartered in the barrack.

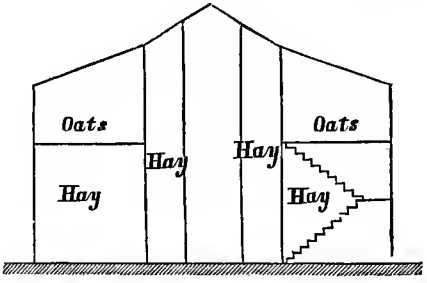
The hospital is for both officers and non-commissioned officers.

In the kitchens, the Choumara marmites are used.

The stables have already been described.

In accordance with the system now adopted in France, the prison consists of small cells, opening upon a corridor which communicates with the guard-room; the system of solitary confinement is resorted to as the only one of any avail. Each prisoner has a bunk, mattress, pillow, and blanket, belonging to the prison. At Saumur the prisoners are obliged to have some of their text-books with them.

Forage-magazine.—The following sketch represents a section



of the forage-magazine; there is a staircase at each end. The oats are kept loose on the floor, in a mass about 3′ deep; a winnowing-machine is provided for cleaning it before issue.

The hay is purchased in trusses of about 15 lbs. each, and is put up, at the magazine, in trusses of a ration each, by hired men. The straw is stacked in piles about 40′ high, in the open air; a wall surrounds the whole establishment. Four months' supply is usually kept on hand. The purchase and issue are in the hands of an officer of the intendance.

Riding-halls.—There are three of these, the largest being 280′ long, 105′ wide, and 25′ high. The roof-truss of wood, supported by wooden arches, which extend nearly to the floor.

The galleries in the middle of the long sides, the entrance-doors at the ends. There is no wainscot, nor are the corners rounded off. The floor is of sand and tan.

The large riding-hall is stated to be too large for the mere riding-drill, and is sufficient for instruction in the first two articles of the platoon drill; it was also stated that it would be desirable to have it large enough for all the lessons of the platoon drill. The second riding-hall is about 216′ × 60′, and is of a good size for the riding-drill. The best shape for a riding-hall is said to be,—the width one-third of the length. Near the large riding-hall there is a target, placed against a brick wall.

They practise at this with pistol, carbine, and musket; at first on foot, afterwards on horseback.

The carbine is said to be worthless, because it is inaccurate and is apt to burn the horse's ears. No very satisfactory results have been obtained with the use of the musket on horseback.

Hurdles about 2½ feet high are placed near the target; they are made of very flexible withes, in order not to trip the horse if he strikes.

The practical exercises consist of: The ordinary riding-hall drill, including vaulting, the "kickers," &c.; the carrière, or outdoor riding at speed, over hurdles, ditches, &c.; cutting at heads; target-practice; fencing; swimming; the usual military drills; skeleton squadron and regimental drills; rides in the country; finally, in the summer, frequent "carrousels" or tilts are held.

The English saddle and bridle are much used by the officers. The saddle for the "kickers" has a high pommel and cantle, and no stirrups.

The Baucher system was fully tried at Saumur, and I was informed that it proved to be inapplicable to the general service. Some few persons, exceptions to the general rule, did wonders with it; but it generally did harm, and is regarded as a very dangerous system in the hands of most officers and men; it is not at all in use at Saumur, or anywhere else in the French service. I will here take occasion to repeat that I took especial pains to make inquiries, in relation to the Baucher system, of the cavalry officers of all the countries which I visited, and that the reply was uniformly the same: that is, that certain parts of the system (those relating to obtaining command of the muscles of the head and neck) were good, and could be applied with advantage by individual officers to their own horses, but that the system would never answer for general introduction in the service.

It should be stated that the non-commissioned officers sent to the school must have served as such at least one year; and that those who attend the school as non-commissioned officers frequently return as officers for instruction, and again in a higher grade on the staff of the school. The officer second in command when I visited the place has been at the school in every grade down to that of lieutenant, inclusive. Officers transferred from the infantry to the cavalry are generally sent to this school for a short time at least.

The veterinary surgeons of the lowest grade are sent here upon their first appointment to receive instruction in equitation, to profit by the study of the model stud, and to learn the routine of their duties with the regiments; they form a separate class, under the direction of the stud. In the *Model Stud* (Haras

des Études) the number of animals varies. There are usually two stallions and about twenty mares, in addition to those selected from time to time from among the riding-animals. At the time of my visit one of the stallions was a superb Arab; among the mares were Arabs, English, Norman, &c. Each animal has a box about 15′ square.

The object of this establishment is explained in the "decree." Attached to it is a botanical garden, more especially for useful and noxious grasses and plants.

The horses of the school are divided into two sets,—one for the riding-hall, the other for military drills; there are about 240 of the former and 600 of the latter. The former are groomed by hired men, the others by soldiers of the remount companies, who do not belong to any regiment.

Each man has four horses to take care of, and has nothing else to do. The horses at the school have a somewhat larger allowance of forage than in the regiments, and are far better animals than the majority in the service.

SCHOOL FOR BREAKING YOUNG HORSES.

The best horses purchased at the remount depots are selected for the officers, and sent to this place to be trained.

A school for trumpeters existed at Saumur prior to the war; soon after the commencement of the war it was broken up,—to the regret of all the officers.

SCHOOL OF FARRIERS.

This is attached to the cavalry school, and is under the direction of the commandant. Private soldiers who have served at least six months with their regiments, and are blacksmiths or horseshoers by trade, compose this school. There are usually two men from each mounted regiment; during the war the number was reduced to one from each regiment. The course lasts two years. It comprises: reading, writing, arithmetic, equitation, the anatomy of the horse, thorough instruction as to all diseases, injuries, and deformities of the foot, something of the veterinary art in general, the selection of metals, making shoes, nails, tools, &c., shoeing horses.

The printed work on farriery (Cours de Maréchalerie, à Saumur) gives the course as taught.

This establishment has a large shoeing shop and yard, with some 12 or 15 forges, a recitation-room, museum, and store-rooms. In the recitation-room there are skeletons of horses, men, &c.,

as well as some admirable specimens of natural preparations in comparative anatomy, a complete collection of shoeing-tools, specimens of many kinds of shoes, &c.

In a recitation of the lowest section I heard a very good explanation of the skeleton, muscles, foot, process of shoeing, use of the "perpendiculars," &c., from different pupils.

This school has been in existence since 1826, and has produced most satisfactory results. Since that year the census returns have shown, it is stated, a diminution of 40 per cent. in the number of lame horses in France,—a result attributed to the good instruction spread through the country by means of this school; for the pupils, upon leaving the service, generally establish themselves as farriers in their native villages.

All the horses of the school are shod here; also those of the inhabitants of the town and its vicinity; the money thus earned pays the expenses of the school.

The shoes are made altogether by hand, and are rather rough.

For small feet, 6 nails are used; for those of medium size, 7; for large feet, such as those of cuirassier horses, 8.

As the regulations require the method of cold-shoeing to be used in the French army, that alone is used here, and is as follows:

The old shoe is removed, and the foot prepared to receive the new shoe. An exact impression of the foot is then taken on a sheet of paper, which is laid against the sole of the foot, and pressed against the edge of the foot by the hand.

The podometer (which is either a thin, flexible bar of lead, or a chain of short, stiff, bar links) is now employed; this is bent to the exact shape of the impression on the paper, and serves as a guide and measure in forging the shoe.

This impression is taken once for all, for each horse.

In the regiments, each farrier has a register, at the head of each page of which are inscribed the name and number of a horse; below are traced the impressions of his fore and hind feet, which can always be reproduced by means of the podometer, or a paper form. Any necessary remarks, as to peculiarities of the horse's foot, and directions for shoeing him, are inscribed by the veterinary. A note is made in the register every time the horse is shod.

No shoe should remain on more than from 30 to 40 days.

By means of this register the farrier prepares, at his leisure, four shoes for each horse, which number should always be on hand; the veterinary inspects them, sees the nail-holes punched, and has them marked with the number of the horse.

On the march, every man must be provided with 4 shoes thus fitted, also with two sets of nails.

The horses are not taken to the forge to be shod, but the operation is performed wherever they happen to be.

In garrison, they leave the stable only long enough to have the old shoe removed, the hoof trimmed, and the new shoe nailed on.

At Saumur, the registers belong to the school, and not to the farriers; the horses, too, are generally taken to the shop to be shod.

Another register is kept here, in which is recorded the work

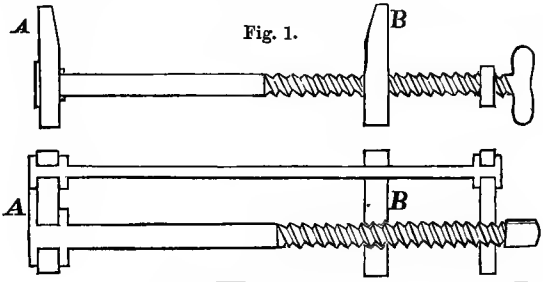


Fig. 1.

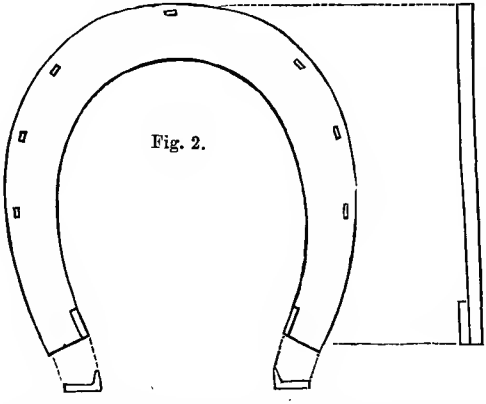


Fig. 2.

done every day, giving the names of the horses, or of their owners, the number of shoes put on, and on what foot, also the names of the men doing the work, so that they may be held responsible for any work badly done.

I observed at this school an arrangement for curing contracted heels; it is said that by means of it very bad cases are permanently cured in a few months.

The sketches on page 202 show the arrangement.

The instrument represented by figs. 1 and 2 is applied to the bars of the hoof; turning the screw, the piece B recedes from A, and thus opens the heel; a shoe, arranged with clips, as shown in the sketch, is then put on, and the clips retain the bars in their new position.

The hoof is opened a very little at each shoeing; it is necessary to be very careful in the application, and not to open the heels too much at once,—from $\frac{4}{100}$ to $\frac{8}{100}$ of an inch at a time. It is sometimes necessary to rasp down the hoof and soak it in oil, to render it more pliable.

I was informed that perfect success attends this operation: in fact, they showed me the impressions of hoofs, badly contracted originally, taken at different times during the process, and then one of the horses with heels apparently in good condition, and without clips on the shoes.

It ought, however, to be stated that a similar process is referred to by Youatt, (page 308, Skinner's edition,) and that his conclusions are entirely against the efficiency of any such process. I give the thing for what it may be worth.

I feel that it would be improper to close my notes upon the school at Saumur without making especial reference to the extreme courtesy and kindness I met with on the part of all the officers of the school. By General de Rochefort, the commandant, and Colonel Schmidt, the 2d commandant, I was placed under great obligations by their personal attentions, and the patient kindness with which they—especially the latter—accompanied me through the different parts of the establishment, and laid open all things for my examination.

List of works, by French authors, or translated into French, of especial value to cavalry officers.

Bugeaud; Instructions Pratiques, pour les Troupes en Campagne.

Bismank; Tactique de la Cavalerie, (trad. par Schauenberg.)

Braek; Avant-Postes de Cavalerie Légère.

Cours d'Equitation Militaire de l'Ecole de Saumur.

Cours de Maréchalerie de l'École de Saumur.

Cours d'Hippologie—par St. Ange.

Decker; Tactique des Trois Armes, (trad. par de Braek.)

Decker; Traité de la Petite Guerre.

Fréderic II (le Grand); Instructions aux Troupes Légères, &c.

Jacquinot de Prêsle; Cours d'Art et d'Histoire Militaire.

La Roche Aymon; Manuel de Cavalerie Légère en Campagne.

Maurice de Saxe; Mes Rêveries, ou Mémoires sur l'Art de Guerre.

Memorial des Officiers d'Infanterie et de Cavalerie.

Muller; Théorie sur l'Escrime à Cheval.

Ordonnance sur le Service Intérieur des Troupes à Cheval.
" " " des Armées en Campagne.
" " " de Cavalerie en Campagne.
" " " des Places—pour la Cavalerie.

Schauenberg; De l'Emploi de la Cavalerie à la Guerre.

Des Principes qui servent de Base à l'Instruction etc. de la Cavalerie —par M. F. d'Aldéguier.

The following are standard works on the veterinary art:

Dictionnaire de Médecine, de Chirurgie, et d'Hygiène Vétérinaire, par M. Huetel d'Arboval, 6 volumes.

Traité de Médecine Vétérinaire Pratique—par L. V. Delwast, 3 volumes.

Nouveau Dictionnaire Pratique de Médecine, de Chirurgie, et d'Hygiène Vétérinaire, par MM. Bouley et Reynal.

Recueil de Mémoires et d'Observations sur l'Hygiène et la Médecine Vétérinaire Militaire; publié par ordre du Ministre de la Guerre, 6 volumes.

Dictionnaire d'Hippiatrique et d'Equitation; par Cardini, 2 volumes.

Much valuable and interesting information as to the history of the horses and haras in France is to be found in a published report, entitled Conseil Supérieur des Haras, Rapport sur les Travaux de la Session de 1850, fait par M. le Général de la Moricière.

ENGLISH CAVALRY.

THE English regular cavalry consists of:
3 regiments of household troops—cuirassiers;
7 regiments of heavy dragoon guards;
3 regiments of heavy dragoons of the line;
4 regiments of light dragoons of the line;
5 regiments of hussars;
4 regiments of lancers;
1 regiment of Cape mounted riflemen.

The regiment of mounted riflemen has 12 troops; the other regiments have 6 or 8 troops each, formed, respectively, into 3 or 4 squadrons.

The troop is the unit of interior service; the squadron is that of tactics.

The usual strength of a troop of the guards is; 1 captain, 1 lieutenant, 1 cornet, 5 sergeants, 1 trumpeter, 1 farrier, and 42 corporals and privates; in other regiments, serving at home, the number of corporals and privates is increased to 58; regiments serving in India, and similar stations, have 1 additional lieutenant and 70 corporals and privates.

The regimental staff consists of: 1 colonel, 1 lieutenant-colonel, 1 major, 1 paymaster, 1 adjutant, 1 quartermaster, 1 surgeon, 1 assistant surgeon, 1 veterinary surgeon, 1 sergeant major, 1 chief trumpeter, 1 armorer, 1 chief saddler, 1 schoolmaster sergeant, 1 hospital sergeant, 1 regimental clerk, 1 paymaster's clerk.

Some regiments have 2 lieutenant-colonels and 2 majors.

TACTICS AND INSTRUCTION.

The squadron is composed of two troops, and is divided into 4 divisions. It is formed in two ranks, half a horse's length (4′) apart; the files have intervals of 6″ from knee to knee.

The squadron-intervals are equal to the front of a division; those between regiments are the same, allowing, in the order of parade, the additional space necessary for the band and staff.

In the squadron the officers, &c., are posted as follows:

The commander of the squadron, (who is the senior captain of troop, and is called "squadron-leader,") one-half a horse's length in front of the centre of the squadron; the commandants of the troops, (called "troop-leaders,") at the same distance in front of the centres of the troops; the 4th officer is posted, as a file-closer, (he is called "squadron serrefile,") one-half a horse's length in rear of the centre of the squadron; the 5th and 6th officers, (called "troop serrefiles,") at the same distance behind the centres of the troops; one sergeant, the standard-bearer, is in the front rank between the troops; 8 sergeants are on the flanks of the divisions, in the front rank, all covered by corporals or old soldiers; the 10th sergeant, as squadron-marker, is in the rank of file-closers, one horse's length on the right of the squadron serrefile; the trumpeters are in the rank of file-closers, behind the second files from the flanks of the squadron; supernumerary officers and sergeants and the farriers are distributed in the rank of file-closers.

The formations are by single file, by files, by sections of threes, and by threes, as in the Russian system.

The front of column is increased or diminished as in our own tactics.

The English tactics being easily obtained, and copies of it being in the possession of the War Department, it is deemed unnecessary to give extracts from it.

Much of the preliminary instruction is worthy of consideration: it is very concise; the commands are generally short, and it should by no means be passed over by officers engaged in the revision of our own tactics.

HORSE EQUIPMENTS, ETC.

The saddle has a lower cantle and pommel than our Grimsley saddle; it is covered with leather.

The snaffle-bit is attached to the halter-headstall by a chain and T; the curb has a separate headstall, which, on the march, is sometimes taken off and hung on the carbine-stock; the halter-shank is a chain, and is worn in the field.

No schabraque is worn; the pouches, valise, &c., present nothing peculiar.

There is a difference between the saddles for the heavy and light cavalry.

The cavalry are armed with the sabre, carbine, and pistol, with the exception of the lancers, who have two pistols and a lance in lieu of the carbine.

The sabre is long, and has a steel guard; it is formed rather for cutting than for thrusting.

Large numbers of the Drane & Adams' revolvers were being made at Liège for the English cavalry; none had been issued in the Crimea.

The Cape mounted riflemen have a sabre, pistol, and a carbine with a double barrel.

The carbine is carried in a boot, and has also a sling.

The cartridge-box is suspended from a shoulder-belt.

The heavy cavalry wear helmets; the light dragoons, shakos; the hussars, fur cylindrical hats, or shakos; the lancers, the czapka.

The cuirassiers have both breast and back plate.

The frock-coat was in course of adoption, but had been issued in the Crimea to only a few regiments.

In the Crimea, the cavalry had their full dress.

The horses of the English cavalry are large and excellent; for the heavy cavalry they leave nothing to be desired. It may be a question whether they have light cavalry, in the true sense of the term, except, perhaps, some of the regiments who have been serving in India and are mounted on Indian horses; for the men and horses of the light cavalry are scarcely to be distinguished from those of the heavy, and it may be doubted whether they would stand the severe work, exposure, and short rations which usually fall to the lot of light cavalry in campaign, as well as the less imposing but lighter and more active material of the light cavalry of other nations.

The horses are usually purchased for each regiment.

The animals in the Crimea in the fall of 1855 were mostly, I believe, remount horses, sent out during the spring and summer; they were generally excellent animals, of great power and weight, but, although in fair effective condition, they were hardly in the state that might have been expected considering the small amount of work they were required to perform. They were encamped upon broken ground, where but little regularity could be perceived in their arrangement.

The men were under canvas, the horses generally blanketed at the picket-ropes; in some few cases, exceptions to the rule, rough stables had been constructed.

The picket-ropes were about 2′ from the ground, and fastened to stakes some 20′ apart; the horses secured to them by the halter chain or rope.

The camp-equipage, cooking-utensils, &c., do not differ materially from those of the infantry.

TRANSPORTATION BY SEA.

The Himalaya was regarded as the most perfect horse-transport; the following description is based upon notes taken during a visit to that vessel in the harbor of Balaklava:

She is an iron screw-ship of 3,000 tons and 700-horse power, and can carry 380 horses, as follows: on the spar-deck 200, main deck 130, orlop-deck 50; the corresponding number of troops can be carried at the same time.

Fig. 4.

The Himalaya was purchased by the government, and commanded by Captain Priest, R.N. To the courtesy of that very intelligent officer we are indebted for the details contained herein.

Fig. 1 (page 209) is a section through the side-boards of a stall.

Fig. 2, a longitudinal section along the axis.

Fig. 3 is the plan of stall.

A represents the halter-rings.

B, the hook to which the sea-halter is hung when not in use.

C and E, projected buttons for securing the sling-ropes shown in fig. 5.

D, sling-bolt, for sling as shown in fig. 4.

F, hook to which the land-halter is hung.

Fig. 4 represents the canvas sling used on the Himalaya. Fig. 5 represents the sling as recommended by Captain Priest, and which he intended to adopt.

Fig. 5.

The tail-board, as shown in the sketch, is permanently attached to the rear posts, and extends to the floor; it is padded nearly to the bottom: it was intended to replace this by a board of the same width as the side-boards, and rounded off at top by a spar, 4½″ in diameter.

The breast and side boards all slip in grooves.

The side-boards are padded on both sides; the breast-board on top and towards the horse.

The material used is felt, or raw hide, (the latter objectionable on account of the odor,) stuffed with cow's hair wherever the animal can gnaw it, with straw in other parts; the pads were from 2″ to 3″ thick.

The feed-trough is of wood, the edges bound with sheet iron or zinc, and attached to the head-board by two hooks.

Fig. 3.

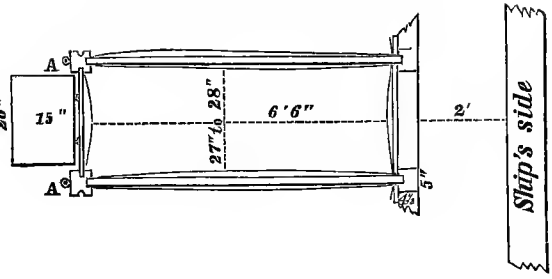


Fig. 2.

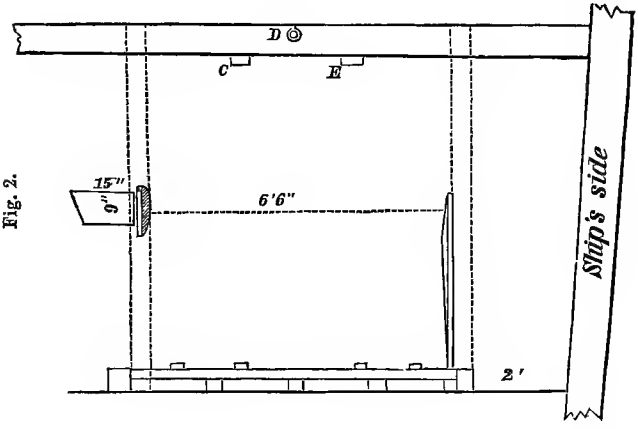
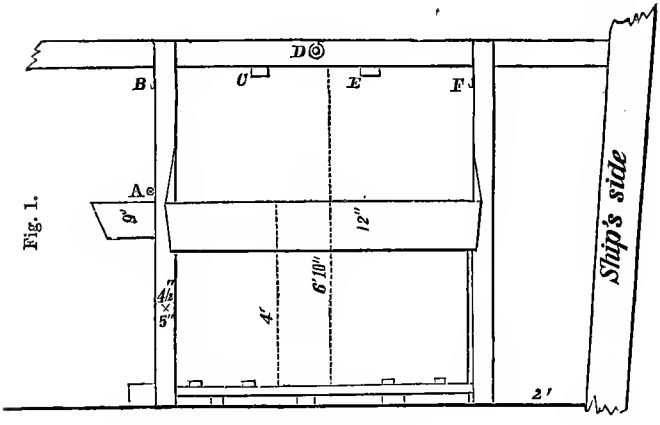


Fig. 1.



The feed-troughs, head-boards, and stalls are whitewashed and numbered.

The floor of the stalls is raised above the deck on buttons, and is divided into separate platforms for every two stalls, so that it can easily be raised to clean the deck beneath; 4 strong buttons are nailed across, to give the animals a foothold.

In front of each head-post there is a halter-ring.

The sea-halter is made of double canvas, 2″ wide, and has two ropes, so that by fastening one to each post the animal's head may be kept still and he cannot interfere with his neighbor.

The slings are of canvas, of the shape and dimensions given in the figures. On the main and orlop decks the sling-ropes are attached to sling-bolts; on the spar-deck, to a button.

It was intended to adopt the arrangement shown in figure 5, as diminishing vibration.

At sea, the sling is used only in cases of necessity; that is, when the animal shows signs of weakness in bad weather; in this case, about 1″ play is given to the sling, as it is only intended to prevent the animal from falling.

The same sling, with the addition of a breast-strap and breeching, is used for hoisting the animals in and out.

Whenever it is possible, a staging is erected alongside, that the horses may be walked on and off the ship.

On the spar-deck the stalls are under sheds, every eight stalls forming a separate set, so that they can readily be moved about when the decks are to be cleaned. Water-proof curtains are provided for the front and rear; a passage-way of 2′, as a minimum, is left between the sheds and the bulwarks.

The other arrangements are as on the other decks.

To place the animals in the stalls, all the side-boards are taken out, except that at the end of the row; a horse is then walked along the row to the last stall, and the other side-board put up; then a second horse is put in the next stall, in the same manner, &c. The horses should always be placed in the stalls in the order in which they are accustomed to stand in the stable or at the picket-rope.

If it is desired, during the voyage, to remove any horse from his stall, it is only necessary to remove the breast-board and walk him out.

All wooden parts are washed with some disinfecting compound, or simply whitewashed. Chloride of zinc is freely used.

The decks are washed every day, and the stalls cleaned after every feed,—especially at 7 P.M.

From the spar and main decks the stale passes off through

the scuppers; from the orlop-deck it passes to the hold, and is pumped off by the engine.

Not the slightest disagreeable odor could be detected on the Himalaya.

The feed-troughs and the nostrils of the horses are washed every morning and evening with vinegar.

For every 8 stalls a scraper, brush, and shovel are allowed.

The horse-guard always remain at their posts, and send for the farrier or non-commissioned officers in case of necessity.

Great attention is paid to ventilation. Although the orlop-deck is so hot that the animals perspire a great deal, the animals carried there came off the voyage in better condition than the others.

The cavalry soldiers attend to the horses. So long as cleanliness is preserved, the commander of the ship does not interfere as to the hours of feeding, &c.

A supply of forage is always carried on board the ship. The veterinaries take their own medicines with them.

As a proof of the perfection of the system pursued on the Himalaya, it should be mentioned that Captain Priest had transported 3,000 animals while in command of her,—some of these direct from England to Balaklava. Out of this number but three (3) died.

The usual hours for feeding are 6 A.M., 11 A.M., 5½ P.M.; if any horse refuses his food, the fact is reported at once. The horses drink condensed steam.

The regulation ration at sea is: 10 pounds of hay, 6 pounds of oats, ½ peck of bran, and 6 gallons of water,—as a maximum.

It was thought that this was generally too great, and that two-thirds of this allowance, except the water, would be ample, as it is found that there is great danger from over-feeding at sea.

No grain is given the day they come on board,—only a mash of bran, which latter is regarded as the best habitual food at sea.

In concluding this subject of the transportation of horses at sea, I would call attention to the little work of Lieut.-Col. Shirley on the subject; it contains many excellent hints; but it must be remembered that the system just explained is founded on a larger experience than that of Col. Shirley.

In regard to the transportation of men, bunks and hammocks are generally used. Standing bunks are found to be very objectionable, on account of the difficulty of keeping them clean; hammocks are regarded as preferable for men in good health, while many officers consider it best to provide neither hammocks nor bunks, but to allow the men to lie down on the fore-decks with their blankets and overcoats.

The following works may be consulted with advantage, as containing useful ideas:

Cavalry Outpost Duty, by Lieut.-Col. Von Arentschildt.

The Cavalry Sword Exercise.

On the Training of Cavalry Remount Horses, by Capt. Nolan.

Cavalry, its History and Tactics, by Capt. Nolan.

SARDINIAN CAVALRY.

THIS consists of:

4 regiments of cavalry of the line, (heavy cavalry.)

5 regiments of light cavalry.

Each regiment consists of 4 active and 1 depot squadrons, and has a strength of about 35 officers and 600 men.

The staff of a regiment consists of: 1 colonel or lieutenant-colonel, 1 major, 2 adjutants, 1 paymaster, 1 captain and 1 lieutenant of clothing and supplies, 1 chaplain, 2 surgeons, 2 veterinaries, 18 non-commissioned officers, &c.

Each active squadron is composed of:

1 captain, 2 1st lieutenants, 2 sub-lieutenants, 1 orderly sergeant, 4 sergeants, 11 corporals, 8 lance corporals, (or 1st-class privates,) 2 trumpeters, 2 buglers, 1 farrier, 1 saddler, 110 privates.

Each depot squadron consists of:

1 captain, 1 1st lieutenant, 1 sub-lieutenant, 1 orderly sergeant, 2 sergeants, 5 corporals, and 10 privates.

There are, in addition to regiments mentioned above, 6 squadrons of local cavalry in the island of Sardinia; the composition of these is nearly the same as that given above.

The four regiments of heavy cavalry are armed with the sabre, lance, and pistols; they wear helmets.

Of the five light regiments, two are lancers, armed with the sabre, lance, and "*pistolon;*" the other three are armed with sabre, pistol, and rifle.

The sabre is 3′ long, broad, and nearly straight; it has a steel scabbard and guard, the latter solid towards the blade; the gripe is unusually long.

The pistol is an ordinary percussion horse-pistol, carried in the left holster, and secured to the saddle by a leather strap attached to the guard.

The rifle has a barrel 30″ long, and is carried slung over the left shoulder.

The "pistolon" is a rifled carbine with a 12″ barrel; it carries a spherical ball, and gives a satisfactory range.

It may be used either as a pistol or carbine, although the stock does not detach; it is habitually carried in the right holster, but there is also a common carbine-sling for it; there is also a hook on one side of the stock, so that the men can hook it to the waist-belt when they dismount.

The lance is about 9½′ long, with a bayonet-point, and a button at the end of the shaft; a strap of steel, 5′ long, is screwed to the shaft; pennon dark blue.

The sabre-belt is much like our own.

The cartridge-box contains 30 rounds, and is suspended by a shoulder-belt; the pistol-rammer is attached to this belt.

The saddle is a bare wooden tree, very similar to the Hungarian; a small pad and a schabraque are laid on top. A common blanket, folded in 12 thicknesses, is placed under the saddle. Girth and surcingle of leather; stirrups of steel, and light.

The snaffle is attached to the halter-headstall by a chain and T; the curb is also of steel, and has a separate headstall, to which it is buckled.

The valise is of cloth, and 24″ long; a shelter-tent, like that of the French, is carried under the valise-flap.

Spurs of steel, and fastened permanently to the boots.

All the cavalry wear a dark-blue frock-coat, with short skirts; pants and overcoat very nearly of the same color as our own. The cap resembles our dragoon shako very closely; it has a yellow water-proof cover, the hind flap of which ties *over* the shako, and a red spherical pompon; there is also a cover for the pompon.

The seat of the pants is re-enforced with cloth, the bottom of the legs with leather; the straps button on one side, and buckle on the other; the pants have a black stripe.

In the Crimea there were 4 squadrons of light cavalry, two of which were lancers; the squadrons were about 130 strong. The ration of forage was 11 pounds of hay, and 8 quarts of barley.

The horses were partly attached to the picket-rope by the right forefoot; some of them by a rope or strap attached to a collar.

Their horses seemed to be excellent animals, but rather low in flesh; they were mostly Italian animals.

The appearance of the Sardinian cavalry, as indeed was that of their whole army in the Crimea, was excellent; indeed, the general appearance of their army was superior to that of either of their allies.

It will be observed that there are no cuirassiers in the Sardinian army; and that their heavy cavalry differs from the light only in the size of the men and horses.

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Regulations and Instructions for the Field Service of the U.S. Cavalry in Time of War. By Geo. B. McClellan, Major-General U.S. Army. To which is added, the Basis of Instruction for the U.S. Cavalry, from the authorized Tactics,—including the formation of regiments and squadrons, the duties and posts of officers, lessons in the training and use of the horse,—illustrated by numerous diagrams, with the signals and calls now in use; also, instructions for officers and non-commissioned officers on outpost and patrol duty. With a drill for the use of cavalry as skirmishers, mounted and dismounted. 1 vol. 12mo. Fully illustrated. $2.

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Hon. C. M. CONRAD, Secretary of War.

Head-Quarters of the Army, Washington, D.C., Dec. 31, 1851.

SIR:—Herewith I have the honor to submit a system of Bayonet Exercises, translated from the French by Captain GEO. B. MCCLELLAN, Corps Engineers, U.S. Army.

I strongly recommend its being printed for distribution to the army, and that it be made, by regulation, a part of the "System of Instruction."

The enclosed extracts from reports of the Inspector-General, &c., show the value.

I have the honor to be, sir, with high respect, your most obedient servant,

WINFIELD SCOTT,

R. JONES, *Adjutant-General.*

Approved. C. M. CONRAD, *Secretary of War.* Jan. 2, 1852.

Revised Regulations for the Army of the United States. 1861. By authority of the President of the United States and the Secretary of War. With a full Index. 1 vol. 8vo. 559 pp. $2.00. JUST PUBLISHED.

War Department, Washington, August 10, 1861.

WHEREAS, it has been found expedient to revise the Regulations for the Army, and the same having been approved by the President of the United States, he commands that they be published for the information and government of the military service, and that, from and after the date hereof, they shall be strictly observed as the sole and standing authority upon the matter therein contained.

Nothing contrary to the tenor of these Regulations will be enjoined in any part of the forces of the United States by any commander whatsoever.

SIMON CAMERON,

Secretary of War.

Important changes and additions have been made to this REVISED edition of the Army Regulations, and it should at once be in the hands of all who have the previous editions.

United States Infantry Tactics. For the Instruction, Exercise, and Manœuvres of the U.S. Infantry, including Infantry of the Line, Light Infantry, and Riflemen. Prepared under the direction of the War Department, and authorized and adopted by SIMON CAMERON, Secretary of War. Containing the School of the Soldier, the School of the Company, Instructions for Skirmishers, the General Calls, the Calls for Skirmishers, the School of the Battalion, the Articles of War, and a Dictionary of Military Terms. 1 vol. complete, illustrated with numerous Engravings. $1.25.

War Department, Washington, May 1, 1861.

This System of United States Infantry Tactics for Light Infantry and Riflemen, prepared under the direction of the War Department, having been approved by the President, is adopted for the instruction of the troops when acting as Light Infantry or Riflemen, and, under the act of May 12, 1820, for the observance of the militia when so employed.

SIMON CAMERON, *Secretary of War.*

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Infantry is divided into Heavy Infantry,—also called Infantry of the Line, and Light Infantry. The difference between Heavy and Light Infantry is twofold: 1st. In their weapons and equipment; the former being armed with the musket, and the latter with the rifle when it may be had. 2d. In the order of battle; Heavy Infantry being in compact order, while Light Infantry is dispersed or deployed as skirmishers, the men being separated and more independent in delivering their fire as sharp-shooters.

In the School of the Company and of the Battalion, *the instruction for Heavy and Light Infantry is the same,* every regiment of Infantry having one company of Light Infantry as a part of its organization, and all these companies being drilled as Infantry of the Line.

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It is believed that, with the same *matériel,* this system will render a company or regiment much more effective than any other.

With a view to insure uniformity in a system of instruction the merits of which are acknowledged by the highest authority, it is now presented to the volunteers and militia called into service, as the authorized drill for the U. S. Infantry, and that by which they will be instructed and disciplined.

WASHINGTON, D.C., May 1, 1861.

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War Department, Washington, Feb. 10, 1841.

The system of Cavalry Tactics adapted to the organization of Dragoon regiments, having been approved by the President of the United States, is now published for the government of the said service.

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Instruction in Field Artillery. Prepared by a Board of Artillery Officers. 1 vol. demi-8vo. $2.50.

Baltimore, Md., Jan. 15, 1859.

COL. S. COOPER, Adjt. Gen. U.S.A.

SIR:—The Light Artillery Board assembled by Special Orders No. 134, of 1856, and Special Orders No. 116, of 1858, has the honor to submit a revised system of Light Artillery Tactics and Regulations recommended for that arm.

WM. H. FRENCH, Bt. Major, Captain First Artillery.
WILLIAM F. BARRY, Captain Second Artillery.
HENRY J. HUNT, Bt. Major, Captain Second Artillery.

War Department, March 6, 1860.

The system of instruction for Field Artillery, prepared by a Board of Light Artillery Officers, pursuant to orders from this Department, having been approved by the President, is herewith published for the information and government of the army.

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Register of the Officers and Graduates of the U.S. Military Academy, at West Point, N. Y., from March 16, 1802, to the present time. Compiled from the official records of the War Department, and other reliable sources, by GEO. W. CULLUM, Lieut. Col. and A. D.C. to Lieut. Gen. WINFIELD SCOTT.

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